BRITISH

FUNGUS-FLORA.

A CLASSIFIED TEXT-BOOK OF MYCOLOGY.

BY

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AUTHOR OF "PLANT LIFE," "THE PLANT WORLD," ETC.

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BRITISH FUNGUS-FLORA.

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FUNGUS-FLORA.

OCHROSPORAE.

The colour of the spores ranges in the various genera from pale dingy ochraceous, through bright ochre, to rusty-orange and ferruginous. In form the spores are either elliptical and symmetrical; elliptical, but oblique or pip-shaped, and either smooth or minutely rough or granular. In some species of *Inocybe* the spores are irregularly globose and coarsely nodulose or warted.

The simplest forms are either resupinate, or sessile and attached by the margin; and from this condition there is a sequence through the central-stemmed forms, having decurrent, adnate, adnexed, and free gills respectively. In *Pholiota* there is a distinct interwoven ring on the stem, and in the large genus *Cortinarius* the secondary veil consists of fine cobweb-like hyphae from the first, which form a very imperfect zone round the stem, and also frequently hang in shreds from the margin of the pileus.

ANALYSIS OF THE GENERA.

A. Gills separating spontaneously or very easily from the flesh of the pileus.

Paxillus.—Margin of pileus persistently involute.

B. Gills not separating spontaneously nor easily from the flesh of the pileus.

† Universal veil cobweb-like, distinct from the cuticle of the pileus.

Cortinarius.—Stem fleshy, continuous with the flesh of the pileus; gills soon powdered with the ochraceous or ferruginous spores.

†† Universal veil never cobweb-like.

* Stem excentric or absent.

Crepidotus.—Fungi growing on wood.

** Stem central.

§ Stem without volva and without ring.

Tubaria.—Gills decurrent; stem cartilaginous.

Flammula.—Gills decurrent or adnate; stem fleshy, not cartilaginous,

Galera.—Stem cartilaginous; margin of pileus straight at first; gills adnexed or adnate.

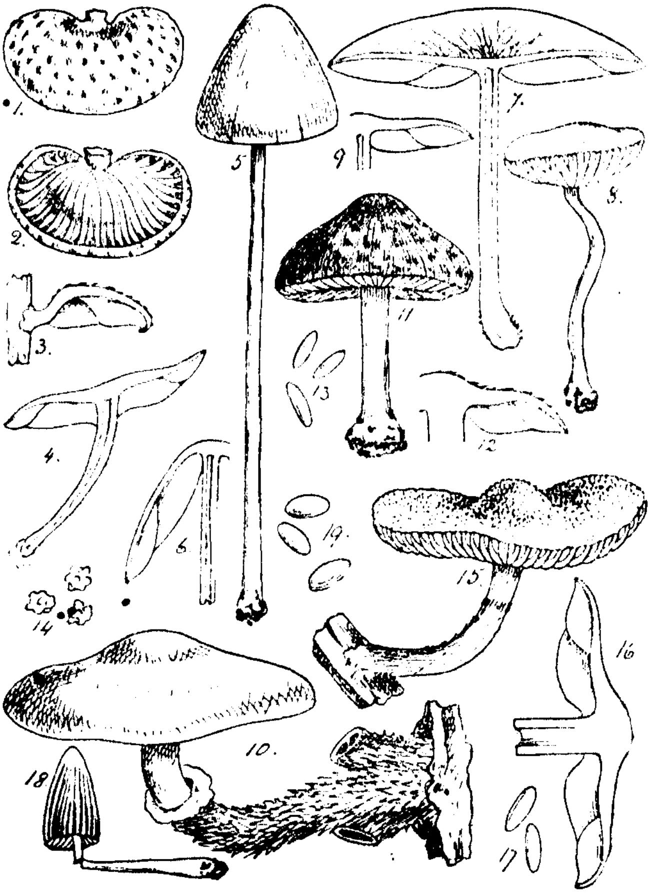
Naucoria.—Stem cartilaginous: margin of pileus incurved at first; gills adnexed or adnate.

Hebeloma.—Stem fleshy, not cartilaginous; cuticle of pileus glabrous, viscid; gills sinuato-adnexed.

FIGURES ILLUSTRATING THE *OCHROSPORAE.*

Fig. 1, *Crepidotus calolepis*, upper surface; nat. size;—Fig. 2, under surface of same; nat. size;—Fig. 3, section of same; nat. size;—Fig. 4, section of *Tubaria furfuracea*, nat. size, a small specimen;—Fig. 5, *Galera tenera*; nat. size of a small specimen;—Fig. 6, section of same; nat. size;—Fig. 7, *Pluteolus reticulatus*; section; nat. size of a small specimen;—Fig. 8, *Naucoria temulenta*, one-third nat. size;—Fig. 9, section of same; half nat. size;—Fig. 10, *Pholiota mutabilis*, nat. size;—Fig. 11, *Inocybe scaber*; one-third nat. size;—Fig. 12, section of same; one-third nat. size;—Fig. 13, spores of same, × 400;—Fig. 14, spores of *Inocybe asterospora*, × 300; —Fig. 15, *Flammula purpurata*, half nat. size;—Fig. 16, *Hebeloma glutinosus*; section half nat. size;—Fig. 17, spores of same, × 300;—Fig. 18, *Bolbitius apicalis*; half nat. size;—Fig. 19, spores of same, × 300.

OCHROSPORAE.



Inocybe.—Stem fleshy not cartilaginous; cuticle of pileus fibrillose or silky; gills sinuato-adnexed.

Bolbitius.—Pileus membranaceous; gills soon deliquescent.

Pluteolus.—Gills free.

§§ Stem furnished with a volva or ring.

Pholiota.—Ring present; volva absent.

Acetabularia.—Volva present, ring absent.

PAXILLUS. Fries.

Pileus symmetrical, excentric, or conchiform; margin involute, more or less fleshy; stem central, excentric, lateral, or absent, expanding at the apex without differentiation into the flesh of the pileus; gills decurrent, usually separated from the flesh of the pileus by a thin differentiated horny or cartilaginous layer, hence easily separated from the latter; spores dirty white or pale ferruginous.

Paxillus, Fries, Gen. Hymen., p. 8; Cke., Hdbk., p. 285.

The most pronounced characteristics of the present genus are: the strongly involute pileus, the decurrent gills easily removable from the flesh of the pileus, and the dingy or ferruginous spores.

ANALYSIS OF THE SPECIES.

I. Lepista.—Pileus entire, central; spores dirty white (rather ferruginous in *P. panaeolus*).

II. Tapinia.—Pileus usually excentric or resupinate; spores ferruginous.

1. LEPISTA.

Paxillus lepista. Fr.

Pileus 2–4 in. across, flattened or depressed, dirty white, or cream-colour, sometimes minutely cracked or scaly, margin thin, even naked, strongly involute; gills narrow, rather crowded, decurrent, dingy white, then pale buff, easily separating from the pileus; stem 2–4 in. long, ½ in. or more thick, solid, flesh compact white, dingy white or cream-colour, with a separable cartilaginous cuticle that passes continuously between the gills and the flesh of the pileus; spores dingy, broadly pyriform, 6 × 8 μ.

Paxillus lepista, Fries, Hym. Eur., p. 402; Cke., Hdbk., p. 285; Cke., Illustr., t. 872.

On the ground, usually in woods. Distinguished from the large white species of *Clitocybe* by the strongly involute margin of the pileus and the dingy gills and spores.

Stem solid, compact, spongy-elastic, at length hollow, due to insect larvae, sometimes short, 1 in. or a little more, attenuated downwards, sometimes 3–4 in. long, equal, base always praemorse, ½ in. thick and more, whitish, sometimes tinged rufous or brownish, base white, villose. Cuticle of stem rather horny, contiguous with and similar to the hymenophore. Pileus sometimes (young) compact, fleshy, then (when old) thin, 3–4 in. and more broad, plano-depressed, obtuse, not striate, but towards the margin torn into squamules, dry, dirty white, the involute margin commonly undulately flexuous. Flesh white. Gills deeply decurrent, slightly branched, but simple at the base, 2–3 lines broad, crowded, entire, dirty white becoming darker. Spores pallid reddish brown. Smell like meal, rather rancid. (Fries.)

Paxillus Alexandri. Fr.

Pileus 2–3 in. across, flesh thick, compact, plane then depressed, margin strongly involute, dry, unpolished, fawn-colour or dingy yellowish-white, the margin when expanded faintly striate; gills decurrent, crowded, 1 line broad, honey-colour; stem ⅔–1 in. long, ½–⅔ in. thick, solid, whitish; spores pip-shaped, 7–8 × 4 μ.

Paxillus Alexandri, Fries, Hym. Eur., p. 401; Cke., Hdbk., p. 379; Cke., Illustr., pl. 1162.

On the ground.

Very hard and compact. Almost exactly resembling a small form of *Lactarius vellereus*, but known in the field by the honey-coloured gills.

Allied to *Paxillus sordarius*, but at first sight almost exactly resembling *Paxillus involutus*, stem about ½ in. long, but above an inch thick, coalescing with moss downwards. Pileus 2–3 in. broad, rarely more. Flesh yellowish-white; spores whitish. (Fries.)

Paxillus extenuatus. Fr.

Pileus 1½–3½ in. across, rigid, disc very fleshy, becoming quite thin towards the margin, campanulato-convex then flattened, naked, glabrous, moist, brownish-tan, or yellowish-tan, margin involute, pubescent, even; gills deeply decurrent, closely crowded, arcuate, about 2 lines broad, white then mouse-colour; stem 1½–2 in. long, 3–5 lines thick, elastic, fibrous, tough, glabrous, solid, ending in a tuberous rooting base.

Panaeolus extenuatus, Fries, Epicr., p. 316; Cke., Hdbk., p. 285; Cke., Illustr., pl. 873.?

Grassy places in fir woods, &c.

The mycelium at the base of the stem adheres to the soil and forms a tuber. Cooke's figure quoted above has the gills yellowish white.

Stem solid, spongy within, fibrous outside and tough, rather horny, elastic, conico-elongated and rather clavate when young, then more equal, 1½–2 in. long, ½ in. thick, glabrous, pallid, base incrassated and rooting, binding the humus into a large bulb. Pileus fleshy, disc compact, rest thin, even, glabrous, moist, at first convex, gibbous, then expanded, obtuse, cracking, 1½–3 in. broad, clay-colour or brownish clay-colour. Margin at first involute, downy, at length expanded, very rigid and fragile. Flesh watery, white, rigid, not a line thick except at the disc, splitting; gills deeply decurrent, arcuate, crowded, linear, very narrow, whitish. (Fries.)

Paxillus panaeolus. Fr.

Pileus 1–2 in. across, flesh thin, convex then plane, becoming rather depressed, glabrous, moist, whitish, margin

thin, involute; gills slightly decurrent, crowded about 1 line broad, at length watery ferruginous; stem 1–1½ in. long, 2–3 lines thick, fibrillosely striate, thickened downwards, rufescent, stuffed; spores subglobose, pale ferruginous, 5 μ diameter.

Paxillus panaeolus, Fries, Monogr., pp. 117 and 310; Cke., Hdbk., p. 286; Cke., Illustr., pl. 874A.

On the ground in pine woods, &c.

Smaller and more slender than *Paxillus extenuatus*. Flesh becoming blackish. Gills separated from the flesh of the pileus by a cartilaginous line. (Fries.)

Subgregarious; at first entirely dirty-white without and within, then becoming yellowish; gills at length watery-cinnamon. Stem fleshy, stuffed, 1 in. or more long, 3 lines thick, striato-fibrillose, thickened downwards. Pileus fleshy, rather compact, convex, then expanded and subdepressed, even, glabrous, moist, with drop-like markings, 1–2 in. broad, margin thin, villous, involute. Gills rather decurrent; crowded, narrow, subvenose at the base, separated from the flesh of the pileus by a horny line. Spores watery ferruginous. (Fries.)

Var. **spilomaeus.** Fries.

Pileus spotted, as with drops, and like the slender stem, white then yellowish. Gills watery ferruginous, horny-grey at the base.

In pine woods.

Paxillus orcelloides. Cke. & Mass.

Pileus 1–1½ in. across, flesh very thin, white, convex then flattened, but with the margin persistently incurved, minutely silky, shining, snow-white at first, becoming stained with greyish blotches; gills adnato-decurrent, crowded, 1½ line broad, whitish then livid, at length dingy yellowish-brown, separated from the flesh of the pileus by a horny line; stem 1–1½ in. long, 3 lines thick at the apex, gradually tapering to the base, which is not more than 1 line thick, elastic, silky-fibrillose, solid, ochraceous; spores elliptical, pale dingy ochraceous, 8 × 4 μ.

Paxillus (*Lepista*) *orcelloides*, Cke. and Massee, Grevillea, vol. xvi. p. 46; Cke., Illustr., pl. 874B.

Amongst grass.

Scattered. Allied to *Paxillus panaeolus*, rather larger, and stem constantly tapering from apex to base; the spores alone separate the two.

Paxillus lividus. Cooke.

Pileus 1–2 in. across, convex, at length slightly depressed at the disc, margin slightly arched and incurved, dingy-white, or livid ochraceous, opaque; gills decurrent, arcuate, almost crowded, 1½ line broad, white; stem 3–4 in. long, ½ in. thick at the apex, attenuated downwards, white, fibrillose, stuffed then hollow, usually rather flexuous; flesh nearly white; spores globose, 3–3·5 μ diameter, nearly white.

Paxillus (*Lepista*) *lividus*, Cke., Grev., xvi. p. 45; Cke., Hdbk., p. 286; Cke., Illustr. t. 861.

In woods. Usually in small clusters.

Closely allied to *Paxillus revolutus*, but distinguished by the absence of any tinge of violet on the pileus or stem, and by the persistently white gills. Indications of rather coarse longitudinal striae are present on the stem in all Cooke's figures.

Paxillus revolutus. Cooke.

Pileus 1–1½ in. across, convex, obtuse, pale ochraceous, slightly darker at the disc, margin thin, even, sometimes at first tinged with violet, a little revolute; gills very decurrent, 1½ line broad, scarcely crowded, pallid then clay-coloured; stem 1–2 in. long, 3–4 lines thick at the apex, gradually attenuated downwards, paler than the pileus, often tinted with violet at the base, solid; spores globose, pale, 3·5–4 μ diameter.

Paxillus (*Lepista*) *revolutus*, Cke., Grevillea, vol. xvi. p. 45; Cke., Hdbk., p. 287; Cke., Illustr., pl. 862.

In fields.

Odour mealy. Allied to *Paxillus lividus*, but known by the deeply decurrent, clay-coloured gills.

II. TAPINIA.

Paxillus paradoxus. Cooke.

Pileus 1–3 in. across, convex then expanded, sometimes irregular or lobed, dry, densely tomentose, rufous-umber,

often with a tinge of purple; flesh thick in the centre, becoming very thin towards the margin, white, tinged vinous below the cuticle; gills decurrent, distant, 2 lines broad, connected by veins, pale then deep yellow, becoming reddish when bruised; stem ¾–1 in. long, 3–5 lines thick, equal, attenuated below, or slightly bulbous, unequal, fibrillose, yellow, more or less stained with red, solid; spores pip-shaped, pale yellow, 20–22 × 7–8 μ.

Paxillus paradoxus, Cke., Hdbk., p. 287; Cke., Illustr., pl. 884.

Agaricus (Flammula) paradoxus, Kalchbrenner, Fung. Hung., t. 16, f. 1; Fries, Hym. Eur., p. 244.

On the ground.

Known at once by the dark-coloured, minutely velvety pileus, and the bright yellow decurrent gills.

Paxillus involutus. Fr.

Pileus 3–6 in. across, fleshy, compact, convexo-plane then depressed, almost glabrous, tawny-ochraceous, the involute margin villose; flesh pallid; gills more or less decurrent, 2–3 lines broad, branched, anastomosing behind, dingy ochraceous, becoming darker when bruised; stem 1–2 in. long, up to ¾ in. thick, solid, firm, naked, paler than the pileus.

Paxillus involutus, Fries, Epicr., p. 317; Cke., Hdbk., p. 287; Cke., Illustr., pl. 875.

Agaricus involutus, Batsch, Consp., f. 61.

On the ground.

Commonly large, stout, pileus villose near the strongly involute margin, with the gills anastomosing and forming irregular pores near the base, and becoming darker when touched, distinguish the species. (Fries.)

Pileus 2–3 in. broad, depressed in the centre, margin much rounded, involute and villose, yellowish or ochrey-brown, very smooth when dry. Lamellae rather numerous, sometimes simple, but mostly irregularly forked, brown-yellow, somewhat decurrent. Stipes 2–3 in. long, solid, firm, sometimes hollow in old plants, ½–1 in. thick, brownish-buff, frequently stained or spotted, often not central, and incurved at the base. (Grev.)

Var. **excentricus,** Fries.
Pileus excentric, stem short.
On trunks.

Paxillus leptopus. Fr.

Pileus 2–3 in. across, excentric, gibbous, at length depressed, torn into villose squamules, yellowish-brown, flesh yellow; gills decurrent, simple, straight, very narrow, yellowish, then darker, not becoming spotted when bruised; stem solid, very short, attenuated downwards, incurved, rarely 1 in. long, flesh yellow; spores pip-shaped, pale dingy yellow, 8–9 × 5 μ.

Paxillus leptopus, Fries, Monogr., ii. p. 311; Cke., Hdbk., p. 287; Cke., Illustr., pl. 875.

Paxillus filamentosus, Fries, Epicr., p. 317.

On the ground and on stumps.

On the ground amongst fragments of pine wood. Resembling *Paxillus involutus*, but differing: (1) Stem very short, scarcely reaching 1 inch, rather incurved, attenuated downwards, yellow within. (2) Pileus always excentric or lateral, at length depressed, but gibbous at the centre, 1½–3 in. broad, dry, densely tomentose, soon broken up into densely compacted, villose, brown or yellowish squamules. (3) Thin flesh of the pileus and that of the stem, yellow. (4) Gills simple behind, decurrent, but not anastomosing, straight, crowded, very narrow, yellowish, then becoming darker, but not becoming spotted when touched. Size and form variable, smaller than *P. involutus*, commonly 2 in. broad and high. (Fries.)

Paxillus atro-tomentosus. Fr.

Pileus 3–5 in. across, very fleshy and compact, more or less excentric, gibbous then passing from plane to infundibuliform, dry, rivuloso-granulose, ferruginous, margin thin, involute; flesh white, tinged brown under the cuticle; gills adnato-decurrent, crowded, 2 lines broad, branched at the base, yellowish tawny; stem about 1 in. long and thick, ascending, rooting, covered except at the apex with a dense blackish-umber velvety pile; spores elliptical, pale yellowish, 5 × 2½–3 μ.

Paxillus atro-tomentosus, Fries, Epicr., p. 317; Cke., Hdbk., p. 288; Cke., Illustr., pl. 876.

In pine woods on trunks and on the ground. Commonly solitary.

Robust, firm, often large; usually solitary. Stem solid, elastic, 2–3 in. long, ½–1 in. thick, subequal, not tuberous, curved, ascending, rooting, covered densely with umber-black tomentum, which sometimes has a violet tinge. Pileus compact, fleshy, excentric, plane then infundibuliform, sometimes entirely lateral and ascending, 2–4 in. and more broad, dry, surface cracked into granules, sometimes tomentose, ferruginous, form various. Gills adnate, hardly decurrent, and appearing from their position, ascending, branched at the base, rather anastomosing but not porose as in *P. involutus*, crowded, 3 lines broad, yellowish, readily separating from the grooved flesh of the pileus. Spores almost clay-colour, paler than those of *P. involutus*. (Fries.)

Paxillus crassus. Fr.

Pileus 2–3 in. across, oblique, almost plane, even, becoming ferruginous; flesh thin at the margin, thick at the centre and passing insensibly into the stem, soft and spongy, yellowish-brown; gills decurrent, 2 lines broad, rather distant, straight, not anastomosing, cinnamon; stem ½–⅔ in. long, tapering downwards, excentric, ascending, stuffed, coloured like the pileus; spores elliptical, ferruginous, 15–18 × 7–8 μ.

Paxillus crassus, Fries, Epicr., p. 318; Cke., Hdbk., p. 288; Cke., Illustr., pl. 877.

On trunks, worked wood, &c.

The present species looks much more like a *Flammula* than a *Paxillus*.

Paxillus panuoides. Fr.

Pileus 2–3 in. across, dimidiate, shell-shaped or fan-shaped, minutely pubescent then almost smooth, sessile or extended behind into a stem-like base, dingy yellow; gills decurrent, crowded, branched, crisped or rugulose, yellow; flesh of pileus 2 lines thick, equal.

Paxillus panuoides, Fries, Epicr., p. 318; Cke., Hdbk., p. 288; Cke., Illustr., pl. 878.

On pine and other wood, on sawdust, &c.

Very variable.

Very distinct from the preceding species in the pileus

being sessile or extended behind; at first sessile resupinate, soon shell-shaped, dimidiate, obovate, at length broadly expanded, undulately lobed, often imbricated. Every part dingy yellow. Size very variable, about 1½ in. long. Surface minutely pubescent, then glabrous, slightly rivulose. Flesh equal, but thin. Gills decurrent to the base, anastomosing behind, branched, crowded, crisped, yellow. In a small form the gills radiate from an excentric point. (Fries.)

Var. **fagi**, Cooke.

Gregarious, crisped, pallid upwards, orange beneath; gills crisped, orange.

Paxillus panuoides, B. & Br., Ann. Nat. Hist., No. 1961.

On a beech stump.

Although described as a distinct species, we fail to detect in the dried specimens, or in the spores, any specific difference from *P. panuoides*; only the deeper colour of the gills and different habit being manifest. (Cooke.)

CORTINARIUS. Fries. (All figs. on p. 16.)

Pileus symmetrical, flesh thick or membranaceous; stem central, flesh continuous with that of the pileus; veil cobweb-like or silky-fibrillose, not interwoven to form a membrane, distinct from the cuticle of the pileus and superficial, not forming a distinct ring on the stem, but frequently remaining as a silky or fibrillose zone; gills persistent, dry, pulverulent, often violet at first, finally ferruginous or bright cinnamon from the spores.

Cortinarius, Fries, Epicr., p. 255; Cke., Hdbk., p. 236.

One of the most natural of genera belonging to the Agaricinae, but at the same time difficult to define in words. The most marked features are the cobweb-like or spidery veil and the bright ferruginous spores. The gills are dry and thin, the mode of attachment various, free, sinuate and adnexed, adnate, and sometimes with a decurrent tooth, but rarely truly decurrent. When young, the gills are often more or less tinged with purple or blue, as is also the stem, and in fact in many species every part of the fungus is more or less tinged with purple or blue when young, this colour, however, usually disappearing at maturity.

Cortinarius is most nearly allied to *Flammula*, but in the latter genus most of the species grow on wood, the gills are often truly decurrent, and the spores are not bright ferruginous.

All the species of *Cortinarius* grow on the ground, mostly in woods, or amongst grass under trees.

The most natural of the genera of the Agaricinae, but not easily defined by artificial characters. The veil and gills afford the principal marks of distinction. Gills usually becoming cinnamon-colour. Rare or wanting in hot countries, but generally abundant in northern woods. All are autumnal. The appearance is very different at different stages of growth, and also depending upon the amount of moisture present. It is necessary, therefore, to examine species in both the young and old stage. Some species of *Flammula* resemble them, but are not likely to be confounded with them. (Fries.)

ANALYSIS OF THE SUBGENERA OF CORTINARIUS.

I. Phlegmacium. Fries, Epicr., p. 256.

Partial veil cobweb-like. Pileus viscid, equally fleshy. Stem firm, dry.

II. Myxacium. Fries, Epicr., p. 273.

Pileus and stem both viscid; flesh of pileus rather thin; the viscidity of the scarcely bulbous stem due to the glutinous universal veil; gills adnate or decurrent.

III. Inoloma. Fries, S. M., i. p. 216.

Pileus equally fleshy, not viscid, dry, not hygrophanous, covered at first with innate, silky, fibrillose squamules. Veil simple. Stem fleshy, rather bulbous.

IV. Dermocybe. Fries, Epicr., p. 283.

Flesh of pileus thin and equal, watery or coloured when moist; dry, not viscid nor hygrophanous, at first villous from an innate silkiness, but glabrous when adult; stem

equal or attenuated, rigid externally, elastic or fragile, stuffed then hollow. Veil simple, fibrillose (in *C. caninus* forming a zone round the stem).

V. Telamonia. Fries, S. M., i. p. 210.

Pileus hygrophanous, moist, at first glabrous or sprinkled with the whitish superficial fibrils of the veil, flesh either equally thin, or when thick, becoming abruptly thin towards the margin (not equally attenuated), splitting. Stem either annulate or peronately squamulose below from the universal veil, apex rather cortinate above, hence with a double veil.

VI. Hygrocybe. Fries, Monogr., ii. p. 93.

Pileus glabrous or covered with superficial white fibrils, moist when growing but not viscid, becoming pale in colour when dry; flesh very thin, or scissile, disc rarely more compact. Stem rather rigid, not peronate; veil thin, fibrillose, rarely collapsing and forming an irregular zone round the stem.

Subgen. HYGROCYBE.

ANALYSIS OF THE SPECIES.

I. Firmiores.

Pileus rather fleshy, convex or campanulato-convex then expanded, obtuse or at length gibbous, margin at first incurved. Stem (in most cases) attenuated upwards.

* Stem and veil white.

** Stem and gills usually violet.

(In certain species of the previous section the stem shows an evanescent tinge of violet at the apex.)

*** Stem and imperfect veil yellow or rufous.

**** Stem becoming dusky, veil pallid, dingy, or white (not yellow); gills dark.

II. Tenuiores.

Pileus almost membranaceous, conical then expanded, umbonate, umbo acute, rarely obtuse or indistinct (in the contrary ratio in *Firmiores*); margin straight at first. Stem almost equal or attenuated towards the base.

* Stem white.

** Stem violet or reddish.

*** Stem yellowish, usually growing pale.

**** Stem growing dusky.

Subgen. HYGROCYBE. Fr.

Firmiores. *Pileus rather fleshy, margin incurved when young.*

* *Stem and veil white.*

Cortinarius (Hygr.) firmus. Fr.

Pileus about 3 in. across, truly and equally fleshy as in the subgenus *Inoloma*, convexo-plane, obtuse, firm, even, glabrous, shining, dry, scarcely viscid when moist, not bibulo-hygrophanous, tawny-ochraceous, unchangeable; flesh not splitting, white; gills emarginate, crowded, thin, but brown, almost the colour of the pileus, quite entire; stem 3 in. long, about ½ in. thick, naked, firm, rather elastic, base clavate or rather bulbous, rarely equal, solid, white; veil fibrillose, white, fugacious.

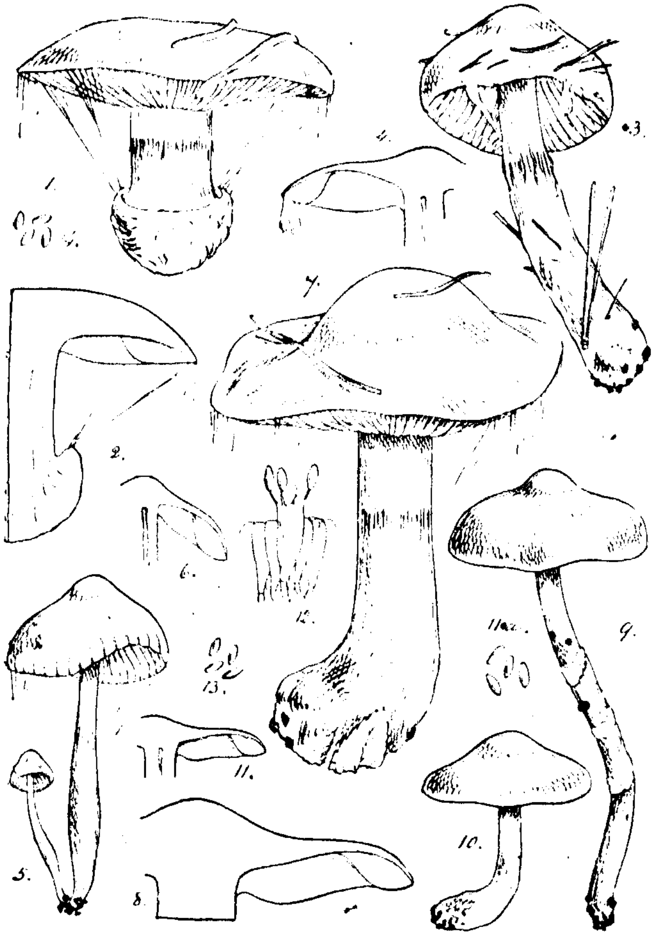
Cortinarius (Hygr.) firmus, Fries, Monogr., ii. p. 93; Cke., Hdbk., p. 274; Cke., Illustr., pl. 792.

Grassy places in mixed woods. Known from allies (*C. subferrugineus*, &c.), by the clear colour of the pileus and white stem. (Fries.)

The veil and fibrils of the stem become at length ferruginous.

Cortinarius (Hygr.) subferrugineus. Fr.

Pileus about 3 in. across, unequally fleshy, disc abruptly compact, convex then expanded, obtuse, often flexuous, firm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but not rigid, even, glabrous, ferruginous or watery cinnamon, more or less hygrophanous, when dry tawny, shining, or becoming pale; flesh splitting, dingy, pale ochraceous; gills very emarginate, 3 lines broad, more or less crowded, at first pale, soon watery, then dingy ferruginous; stem in the typical form solid, more or less bulbous, attenuated upwards; adpressedly fibrillose, externally rigid, subcartilaginous, pallid, soft within and dull orange at the base; amongst heaps of rotten pine leaves, stout, very much inflated, spongy; size variable, usually 3 in. long, ½ in. thick; veil entirely fibrillose, marginal only, not peronate, very fugacious, spores 8–10 × 5–6 μ.

Cortinarius (*Hygrocybe*) *subferrugineus*, Fries, Monogr., ii. p. 93; Cke., Hdbk., p. 274; Cke., Illustr., pl. 808.

On the ground amongst leaves, &c., smell and taste unpleasant.

There are many forms distinct so far as colour is concerned, but difficult to describe. Distinguished from *C. armeniacus* in the opaque colour; fleshy, obtuse pileus, the stem not being elastic, and in the veil not collapsing. Differs from *C. birelus* in the simple veil, smooth hygrophanous pileus, (watery ferruginous when moist, becoming ferruginous-tan when dry.) (Fries.)

Cortinarius (Hygr.) armeniacus. Fr.

Pileus 2–4 in. across, rigid, rather fleshy, flesh-coloured

ILLUSTRATIONS OF THE GENUS *CORTINARIUS.*

Fig. 1, *Cortinarius* (*Phlegmacium*) *purpurascens*, Fr., entire fungus, showing the cobweb-like veil and the marginate bulb of the stem; about one-third nat. size;—Fig 2, sect on of same, showing the fleshy pileus; one-third nat. size;—Fig. 3, *Cortinarius* (*Myxacium*) *stillatitius*, Fr.; about one-third nat. size;—Fig. 4, section of same; one-third nat. size;—Fig. 5, *Cortinarius* (*Hydrocybe*) *obtusus*, Fr.; one-third nat. size;—Fig. 6, section of same; one-third nat. size;—Fig. 7, *Cortinarius* (*Inoloma*) *albo-violaceus*, Fr.; about one-third nat. size;—Fig. 8, section of same; one-third nat. size;—Fig. 9, *Cortinarius* (*Telamonia*), *gentilis*, Fr.; one-third nat. size;—Fig. 10, *Cortinarius* (*Dermocybe*) *decumbens*, Fr.; one-third nat. size;—Fig. 11, section of same; one-third nat. size;—Fig. 11A, spores of same; × 400;—Fig. 12, basidium and spores of *Cortinarius* (*Inoloma*) *albo-violaceus*, Fr.; × 400;—Fig. 13, spores of *Cortinarius* (*Hydrocybe*) *obtusus*, Fr.; × 400;—Fig. 14, spores of *Cortinarius* (*Phlegmacium*) *purpurascens*, Fr.; × 400.

like the pileus, splitting; campanulate, convex, then expanded, broadly and obtusely umbonate, even, glabrous, not viscid, tawny-cinnamon when moist, ochraceous when dry, margin faintly striate here and there; gills adnate, at length slightly rounded, always crowded, rather broad, at first pallid then tawny cinnamon, shining; stem usually 2–3 in. long, ¼ in. thick, fibrillose, rigid and rather cartilaginous outside, stuffed and spongy within, hence elastic, every part white, conico-attenuated; when growing on rotten heaps of leaves in moist places, the stem is much inflated, amongst damp moss it is longer and more slender; spores elliptical, 8–9 × 5 μ.

Cortinarius (*Hygrocybe*) *armeniacus*, Fries, Monogr., ii. p. 94; Cke., Hdbk., p. 274; Cke., Illustr., pl. 793.

In woods, especially of pine.

Firm, bright, changeable, gills thin, at length shining. White fibrils of the pileus soon vanishing, flesh readily splitting, ochraceous when dry. (Fries.)

Pileus 2–4 in. broad, campanulate, soon convex, expanded, sometimes acutely umbonate, margin thin, patent, moist, not viscid; when dry tan, inclining to light red. Gills distinct, 2–3 lines broad, when young watery cinnamon. Stem 2–3 in. high, 2 lines to 2 in. thick, rather soft, sometimes above, conic or subequal; veil rather woven. (Fries.)

Var. **falsarius**, Fries.

Pileus yellow, white when dry.

Cortinarius (Hygr.) damascenus. Fr.

Pileus about 3 in. across, firm, flesh of disc thick, at the margin very thin; convexo-plane, orbicular, obtuse or very obtusely umbonate, even, almost glabrous, usually torn into minute squamules when dry, cinnamon-bay, disc often darker; gills adnate, rather distant, thin, distinct, narrowest in front, opaque, pale cinnamon; stem 3 in. long, ½ in. thick, exactly cylindrical, and equal, hard, elastic, fibrillose, white, solid; veil fibrillose, white, fugacious; spores elliptical, 12 × 6 μ.

Cortinarius (*Hygrocybe*) *damascenus*, Fries, Monogr., ii. p. 95; Fries, Hym. Eur., p. 387; Cke., Hdbk., p. 274; Cke., Illustr., pl. 856.

In meadows and pastures.

Subcaespitose; taste acrid. Pileus broadly gibbous, disc sometimes bay; cuticle rigid, torn up into granules when dry. (Fries.)

Cortinarius (Hygr.) privignus. Fr.

Pileus about 2 in. across, slightly and unequally fleshy, convex then expanded, sometimes reflexed and undulate, obtusely umbonate, not striate, dry, but remarkably hygrophanous, fundamental colour brown, but pale and hoary from the remains of the very thin white veil, pale tan when dry; gills adnate, broad, not crowded, distinct, at first watery, then opaque cinnamon, margin serrated and albo-fimbriate in a perfect condition; stem about 3 in. long, 3 lines thick, often twisted, sometimes attenuated from the base, at others equal, pale, silvery, here and there silky-white from the veil; spores 8 × 5 *μ*.

Cortinarius (Hygrocybe) privignus, Fries, Epicr., p. 304; Cke., Illustr., pl. 827; Cke., Hdbk., p. 275.

Damp places in pine woods.

Very fragile, scented, but scarcely acrid. Gills rather broad, at first with a slight flesh-coloured tinge, with no tinge of violet; there is in rare instances a fugacious violet tinge at the apex of the stem. With the habit of *Cortinarius (Inoloma) malachius*. (Fries.)

Cortinarius (Hygr.) duracinus. Fr.

Pileus 1½–2½ in. across, rather fleshy, thin, convex then plane, gibbous, glabrous, pale tan-colour, opaque; gills adnate, 3 lines broad, rather crowded, thin, watery cinnamon; stem 1½–2½ in. long, ½ in. or more at the thickest part, rigid, unequal, more or less ventricose at or below the middle, ending in a tapering, rooting base, whitish, silky, as is also the incurved margin of the pileus from the veil, glabrous, stuffed; spores 5 × 3 *μ*.

Cortinarius (Hygrocybe) duracinus, Fries, Epicr., p. 304; Cke., Hdbk., p. 275; Cke., Illustr., pl. 809.

On the ground, especially in woods.

Remarkable, becoming pale, rigid, cuticle of pileus and stem hard. Stem sometimes bulbous with a fusiform root, sometimes entirely fusiform, even, cuticle separable. The

In grassy places. Odour faint.

Evidently allied to *Cortinarius armeniacus*, and when old and decoloured the two are easily confounded. Subcaespitose, odour weak. Stem firm, stuffed, spongy within, incrassated downwards, 2–3 in. long, ½–1 in. thick, sometimes shorter and bulboso-ventricose, fibrillose, saturated violet, but becoming whitish. Veil inferior, copious, white. Pileus unequally fleshy, campanulate when young, then expanded, obtuse, 2–3 or even 4–5 in. broad, even, glabrous, or when young superficially silky near the margin from the veil; dark bay or almost umber, soon becoming dry and brick-red, losing colour very much. Flesh violet becoming whitish, thin at the margin. Gills rounded behind, adfixed, very broad (4 lines) crowded, thin, fragile, purplish when young, at length watery ferruginous. (Fries.)

Cortinarius (Hygr.) imbutus. Fr.

Pileus 2–4 in. across, fleshy in the centre, very thin elsewhere, convex, obtuse, glabrous, yellowish tan, becoming pale when dry, slightly fibrillose towards the margin; gills adnate, rather distant, about 4 lines broad, greyish-violet then cinnamon; stem 2–3 in. long, ½ in. or more thick, equal, even, whitish, apex tinged with violet, solid; spores pale ferruginous, elliptical, 7–8 × 4–5 μ.

Cortinarius (Hygrocybe) imbutus, Fries, Epicr., p. 306; Cke., Hdbk,, p. 276; Cke., Illustr., pl. 870.

In woods.

Stem solid, equal, 3 in. long, not an inch thick, sometimes twisted, even, scarcely fibrillose, whitish, apex dilute violet, same colour within. Veil white, adhering to the margin of the pileus and to the stem, fugacious. Pileus almost equally fleshy, convex, obtuse, 3 in. broad, even, glabrous, hoary-fibrillose towards the margin, tan-colour then yellowish-red. Gills rounded behind, rather distant, 3 lines broad, at first dark grey or greyish-violet, never with a purple tinge, then watery cinnamon. (Fries.)

Cortinarius (Hygr.) castaneus. Bull.

Pileus about 1½ in. across, rather fleshy but firm, almost tough, campanulate then expanded, sometimes obtusely umbonate, often irregular, even, glabrous, brownish-chestnut,

scarcely paler when dry, but shining, umbo becoming blackish, paler towards the margin; gills adnate but sometimes emarginate, crowded, thin, 2–3 lines broad, edge whitish, colour at first either purple-violet or ferruginous, ferruginous when adult in either case; stem about 1 in. long, 2–3 lines broad, tough, cartilaginous outside, slightly fibrillose from the veil, otherwise glabrous, even, almost equal, violet or pallid-red, not changing when dry, imperfectly hollow; veil entirely fibrillose, scanty, white, from which the pileus has a white, silky zone round the margin; spores obscure ferruginous.

Agaricus (Hygrocybe) castaneus, Fries, Mon., ii. p. 99; Cke., Illustr., pl. 842; Cke., Hdbk., p. 276.

Agaricus castaneus, Bull., Champ., t. 268.

Grassy places in woods, pastures, &c. Gregarious or caespitose, always small.

A larger, solitary form occurs, having the pileus up to 2 in. across, umbilicate, gills less crowded. (Fries.)

Gregarious. Pileus 1 in. or more broad, subcarnose, at first obtuse with a delicate fibrillose veil which makes the margin appear silvery, dark-bay or dirty-violet, sometimes with a tawny tint, soon expanded, broadly umbonate, umbo more or less obtuse. Gills of the colour of the pileus, or purplish-umber, at length subferruginous, ventricose, adnate. Stem 1½ in. high, 2 lines thick, beautifully fibrillose and white from the veil beneath, much paler than the pileus, but with more or less of the same tint, sometimes tinged with violet. Odour none; taste like that of *A. oreades*. Eatable. When growing on wood it is conical and more tawny. (Berk.)

Cortinarius (Hygr.) bicolor. Cooke.

Pileus 1–2 in. across, rather fleshy, campanulate then expanded, broadly, or occasionally rather acutely umbonate, somewhat fragile, dingy whitish, with an occasional tinge of lilac, even, smooth, silky, shining, flesh thin, colour of the pileus, or paler; gills adnate, with a tooth, 3–4 lines broad, rather ventricose, slightly erected at the edge, rather broad, scarcely crowded, purplish-violet, then cinnamon; stem about 2 in. long, ¼ in. thick, equal or attenuated downwards, often curved, pallid violet, becoming whitish, solid;

veil fugacious, white; spores elliptical, a little attenuated towards one or both ends, 12–14 × 6–7 μ.

Cortinarius (*Hygrocybe*) *bicolor*, Cke., Grevillea, **xvi.** p. 45; Cke., Hdbk., p. 277; Cke., Illustr., pl. 871, also pl. 820, f. B, (as *Cortinarius quadricolor*.)

On the ground in mixed woods.

Flesh of stem bright and purplish-violet at the base; pallid above. (Cooke.)

*** *Stem and imperfect veil yellow or rufous.*

Cortinarius (Hygr.) balaustinus. Fr.

Pileus 1–2½ in. across, fleshy, convex then plane, obtuse, moist, virgate with innate fibrils, glabrous, rufous-ferruginous, tawny brick-red and shining when dry; gills adnate, broad behind, rather crowded, ferruginous-rufous; stem about 3 in. long, conically attenuated upwards, fibrillosely striate, pallid, then tawny-ferruginous externally and internally, solid; spores obliquely elliptical, 8 × 4–5 μ.

Cortinarius (*Hygrocybe*) *balaustinus*, Fries, Epicr., p. 307; Cke., Hdbk., p. 277; Cke., Illustr., pl. 794.

In beech woods, &c.

Size of *Cort. subferrugineus*; veil becoming rufous. Stem often incurved. Gills quite entire, at first deep cinnamon.

In beech woods. Entirely rufous or rufo-ferruginous, larger and more robust than other species of the subgenus. Stem stuffed, clavato-bulbous, attenuated upwards, firm, 2–3 in. long, ½ in. thick, often curved, fibrillose, pale and streaked with rufous when young, ferruginous outside and inside when adult. Pileus rather fleshy, convex then expanded, 3 in. broad, obtuse, almost glabrous, but under a lens minutely fibrilloso-virgate, moist when fresh (but not viscid), reddish-ferruginous, reddish-tawny when dry, shining, the thin margin expanded. Gills adnate, rather crowded, broad, quite entire, at length rather distant, rufous, (ferruginous-red), very broad behind. (Fries.)

Cortinarius (Hygr.) colus. Fr.

Pileus 1–2 in. across, rather fleshy, campanulate when young, then convex, obtusely umbonate or altogether obtuse, symmetrical, rufous-brown, when dry paler, brick-red,

shining; flesh similarly coloured, dingy white when dry; gills adnate, scarcely sinuate, 3 lines broad, plane, firm, tough, rather thick, not very crowded, veined, dark cinnamon, paler when young; stem 4 in. long, 3–4 lines thick at the base, 2 lines at the apex, stiff, naked, not cartilaginous, but everywhere remarkably longitudinally fibrillose, splitting, the fibrils coloured like the pileus, base sometimes rooting, encircled by blood-red mycelium; veil entirely fibrillose, tawny-red; spores ochraceous, pip-shaped, 9 × 4 μ.

Cortinarius (*Hygrocybe*) *colus*, Fries, Mon., ii. p. 102; Cke., Hdbk., p. 277; Cke., Illustr., pl. 795.

In pine woods.

Mycelium fiery-orange.

Cortinarius (Hygr.) isabellinus. Fr.

Pileus about 2 in. across, rather fleshy, convex, rather umbonate, even, glabrous, yellowish; when dry yellow and shining; gills adnate, rather distant, broad but thin, at first yellow then cinnamon-tan; stem 4 in. long, 4 lines thick, everywhere equal, very rigid and firm, partly hollow, distinctly striated, yellowish; veil almost obsolete, yellowish; spores cinnamon, obliquely pip-shaped, minutely granular, 10 × 5 μ.

Cortinarius (*Hygrocybe*) *isabellinus*, Fries, Monogr., ii. p. 103; Cke., Hdbk. p. 278; Cke., Illustr., pl. 829.

In dry pine woods.

Allied to *C. colus*, but more rigid and firm. Veil scanty, very fugacious, yellow. (Fries.)

Cortinarius (Hygr.) renidens. Fr.

Pileus 1–2 in. across, rather fleshy, convex then plane, gibbous, hygrophanous, glabrous, shining, tawny, ochraceous when dry; gills adnexed, crowded, 2–3 lines broad, thin, tawny; stem 1½–2 in. long, 3–4 lines thick, equal, firm, glabrous, stuffed, yellow, as is also the fibrillose veil; spores elliptical, apiculate, 8–10 × 5 μ.

Cortinarius (*Hygrocybe*) *renidens*, Fries, Epicr., p. 308; Cke., Hdbk., p. 278; Cke., Illustr., pl. 782.

In shady woods, Usually slightly clustered.

Nature and appearance is that of *C. armeniacus*, but smaller and brighter coloured, and especially by the yellow veil,

readily distinguished, stem firm, stuffed, 1½–2 in. long, 3–4 lines thick, exactly equal, rather cartilaginous outside, entirely breaking up under pressure into fibrils, coloured like the pileus, yellowish-pallid then tawny. Veil loosely fibrillose, fugacious, yellow. Pileus slightly fleshy, firm, convexo-plane, obtuse or gibbous, 1–2 in. broad, very glabrous, shining, tawny-ferruginous when moist, ochraceous when dry; disc often becoming pale. Flesh thin, splitting, paler. Gills adnate, but also receding and becoming free, rather crowded, entire, broad at first pale cinnamon then tawny. Spores dusky ochraceous. Smell weak, not at all like radishes. (Fries.)

Cortinarius (Hygr.) angulosus. Fr.

Pileus 2–3 in. across, flesh thin, convex then plane, very obtuse, wavy, margin incurved when young, flexuous, even glabrous, reddish-tawny, variegated with darker spots, hygrophanous, tawny-ochraceous when dry, not shining; flesh firm, not splitting, yellowish-white; gills adnate, rather thick, rather distant, 3 lines and more broad, fragile, tawny, edge entire, same colour: stem 1½–2 in. long, 3–4 lines thick, equal, striate, tawny, twisted, stuffed then hollow; veil very fugacious, tawny.

Cortinarius (Hygrocybe) angulosus, Fries, Epicr., p. 308; Cke., Hdbk., 379; Cke., Illustr. Suppl., t. 1178.

On the ground in fir woods.

Var. **gracilescens.** Fries, Mon., i. p. 104. Stem hollow, 3 in. long, 2–3 lines thick, base almost attenuated, also tortuous; pileus rather fleshy.

Amongst moss in pine woods.

**** *Stem dusky, veil pallid, dingy, or white; gills dark.*

Cortinarius (Hygr.) uraceus. Fr.

Pileus 1–2 in. across, slightly fleshy, conical then campanulate, at length expanded, obtusely umbonate; moist, even, glabrous, umber or brown, sometimes with an olive tinge, rather shining, when dry (brick-red when young) commonly tan or dirty pale ochraceous, at length rather fibrillose. Flesh brown, darker in the stem. Gills adnate, ventricose, firm, 3 lines and more broad, distant, cinna-

metimes quite entire and concolorous, serrate, and white. Stem 2–4 in. long, ndrical, exactly equal, firm, fibrilloso- but becoming even, brown, apex naked, times with an olive shade, at length brown, same colour inside; spores pip- -9 × 4 μ.

, Fries, Epicr., p. 309; Cke., Hdbk., p. l. 796.

f pileus incurved. Veil superior, fibril- ly conspicuous. (Fries.)

[ygr.) jubarinus. Fr.

ross, rather fleshy, campanulate then umbonate, in the larger forms, and when centre, often repand and undulate, at ile, brilliant tawny cinnamon, shining, when young silky at the margin from villose as in *C. cinnamomeus*), when old r a lens, not very hygrophanous, and ; gills adnate, rather distant, 1–3 lines ay-cinnamon, edge quite entire, same long, ½ in. thick, 2–3 lines in small uffed then hollow, fibrilloso-striate, pale within, base and naked apex paler;

ybe) jubarinus, Fries, Monogr., ii. p. 105; Cke., Illustr., pl. 797.

pine leaves, &c.

osely resembling *C. cinnamomeus*, but ibrillose, very fugacious veil. (Fries.)

[ygr.) pateriformis. Fr.

. across, rather fleshy, orbicular, plane y obtuse, rigid, dry, even, glabrous, irst silky-white near the margin from l; gills adnate, with a decurrent tooth, -convex, brick-red or watery cinnamon; 2 lines thick, equal, rather firm, straight, brownish, base downy, white, hollow; ous.

Cortinarius (Hygrocybe) pateriformis, Fries, Epicr., p. 310; Fries, Mon., ii. p. 106; Cke., Hdbk., p. 279; Cke., Illustr., pl. 858.

Amongst grass, in woods, &c.

A larger form occurs in pine woods, having the pileus convexo-plane, 2 in. broad, slightly pilose under a lens, thick, fragile, brown, when dry truly silvery and shining. (Fries.)

The larger form mentioned by Fries is the one figured by Cooke.

Cortinarius (Hygr.) unimodus. Britz.

Pileus about 1 in. across, campanulate then expanded, obtusely umbonate, usually depressed round the umbo, margin arched and rather incurved then straight, smooth, shining, rufous-brown; flesh rather thick except at the margin, dingy; gills rounded behind, adnexed, distant, ventricose, 2 lines or more broad, brown; stem 2–3 in. long, 2–3 lines thick, equal, lax, fibrous, brown below, pale above, hollow; veil whitish, fugacious; spores elliptical, 10–12 × 6 μ.

Cortinarius (Hygrocybe) unimodus, Britzelmayr, Hym. Sudb., iv. f. 131; Cke., Hdbk., p. 279; Cke., Illustr., pl. 359.

In grassy places.

The diagnoses by Britzelmayr are so meagre that his species can only be conjectured. (Cooke.)

Tenuiores. *Flesh very thin, pileus acutely umbonate, margin straight at first.*

* *Stem white.*

Cortinarius (Hygr.) dolabratus. Fr.

Pileus 2–4 in. across, flesh thin, fragile, campanulate then convex, obtuse, for the most part glabrous, superficially silky near the margin, even, brick-colour, when dry even and tan-colour; gills entirely adnate with a decurrent tooth, very broad behind, up to 1 in. broad, rather thick, distant, distinct, tawny-cinnamon; stem 4–6 in. long, $\frac{1}{2}$–$\frac{3}{4}$ in. thick, everywhere equal, cylindrical, glabrous, white, sometimes curved; spores 12–14 × 7–8 μ.

Cortinarius (Hygrocybe) dolabratus, Fries, Epicr., p. 311; Cke., Hdbk., p. 279; Cke., Illustr., pl. 811.

In pine woods, amongst *Vaccinium*, *Sphagnum*, &c.

About the stature of a large specimen of *C. evernius*, but firmer, differently coloured, gills entirely adnate, veil very fugacious. (Fries.)

Cortinarius (Hygr.) rigens. Fr.

Pileus 1–3 in. across, flesh thin, when young campanulate, lax, then convex, obtuse or broadly gibbous, even, glabrous, opaque and tan-colour when moist, whitish-tan when dry; flesh rather firm, white; gills adnate, slightly decurrent, distant, very broad (3–5 lines), distinct, watery tan then pale cinnamon; stem 2–4 in. long, 2–5 lines thick, but very variable, equal, or incrassated, sometimes at the base, sometimes at the apex, also fusiform, stuffed, elastic, distinctly cartilaginously corticated, rigid and tough, rooting, glabrous, even, naked, pallid when moist, white when dry; spores pip-shaped, minutely granulated, 6–7 × 4 μ.

Cortinarius rigens, Fries, Monogr., i. p. 107; Cke., Hdbk., p. 280; Cke., Illustr., pl. 812.

In woods.

Allied to *Cortinarius dolabratus*, but more rigid, not fragile, smaller, and paler; gills also darker and opaque. Flesh white. Veil scarcely evident. (Fries.)

Cortinarius (Hygr.) Krombholzii. Fr.

Pileus 1–2 in. across, rather fleshy, conico-campanulate, then gibbous, even, smooth, disc fleshy, pale yellowish-tan, disc darker, margin thin, appendiculate; gills rounded behind and slightly adnexed, 3 lines broad, ferruginous, margin yellowish; stem 3–5 in. long, 3 lines thick, equal, extreme base slightly swollen, naked, even, whitish, hollow; veil white, rather membranaceous, soon disappearing from the stem, but remaining in fragments at the margin of the pileus; spores ferruginous, 8 × 4–5 μ.

Cortinarius (Hygrocybe) Krombholzii, Fries, Hym. Eur., p. 395; Cke., Hdbk., p. 280; Cke., Illustr., pl. 813.

On the ground amongst moss. A remarkable species having the ferruginous spores of *Cortinarius*, but with a membranaceous and not fibrillose veil that remains in frag-

ments at the margin of the pileus. Subcaespitose. With the habit of *Hypholoma*.

Cortinarius (Hygr.) Reedii. Berk.

Pileus about 1 in. across, conical then expanded and strongly umbonate, often depressed round the umbo, smooth, shining, persistently brown, disc areolate, margin splitting; gills attenuated behind, free, broad, ventricose, ascending, white or pallid then cinnamon; stem about 1 in. long, 2 lines thick, equal, rather bulbous, fibrilloso-striate, white, solid; veil fibrillose, evanescent; spores 7–8 × 4 μ.

Cortinarius (*Hygrocybe*) *Reedii*, Berk. Outl., p. 194; Cke., Hdbk., p. 280; Cke., Illustr., pl. 843A.

Amongst moss and beech mast.

Cortinarius (Hydrocybe) leucopus. Bull.

Pileus up to 1 in. across, flesh very thin except in the centre, conical, then expanded, margin arched, obtusely umbonate, when dry silky, shining, yellowish clay-colour with a suggestion of pink; gills slightly adnexed, ventricose, rather crowded, pale, then cinnamon; stem equal, white, becoming hollow, 1½ long, 2 lines thick; spores 6 × 3–4 μ.

Cortinarius (*Hydrocybe*) *leucopus*, Bull., Champ., t. 533, f. 2; Cke., Illustr., t. 843B (pileus wrong colour).

On the ground in woods.

Small, with the habit of *Cortinarius pluvius*, but not viscid. (Fries.)

Cortinarius (Hygr.) scandens. Fr.

Pileus ⅓–⅔ in. across, submembranaceous, sometimes acutely at other times obtusely umbonate, slightly fleshy, conical when young, then expanded, glabrous, margin slightly striate, when moist at first tawny-ferruginous then honey-colour, tan-colour when dry, umbo tawny, the intensity of the colour varies with the weather; gills adnate, thin, rather distant, 1–2 lines broad, narrowest behind, tawny-cinnamon, edge entire, same colour; stem hollow, 3–4 in. long, 2 lines thick, incrassated at the apex, base always attenuated, very thin, subulate, flexuous, soft, even, yellowish, but at first sight, from the adpressed fibrils and dryness, shining white; veil thin, fibrillose, white; spores elliptical, obliquely apiculate, 10 × 5 μ.

Cortinarius (Hygrocybe) scandens, Fries, Monogr., i. p. 108; Cke., Hdbk., p. 281; Cke., Illustr., pl. 830.

In damp places in fir woods, &c.

Stem 3–4 in. long, 2 lines thick, soft, yellowish when moist, shining white when dry, base subulate, always white. Veil thin, fibrillose, superior. Pileus ½–1 in. and more, tan-colour when dry, but the umbo, which may be acute, obtuse, or obsolete, rather tawny. Gills narrow, 1–2 lines broad, plane. (Fries.)

** *Stem violet or reddish.*

Cortinarius (Hygr.) erythrinus. Fr.

Pileus 1–1½ in. across, conical then convex, regular, umbonate, umbo obtuse or almost obsolete, darker, even, glabrous, rufous-bay, tawny when dry, the thin flesh almost the same colour when moist; gills slightly adnexed, thin, rather distant, ventricose, at first pallid then pale cinnamon; stem 1½–3 in. long, 2–3 lines thick, equal, rarely thickened at the base, straight or ascending, glabrous, but striate from the adpressed fibrils, white, violaceous above, stuffed then hollow; veil superior, fibrillose, white.

Cortinarius (Hygrocybe) erythrinus, Fries, Monogr., ii. p. 109; Cke., Hdbk., p. 281; Cke., Illustr., pl. 798A.

In damp woods, amongst leaves, &c.

Var. **argyropus**, Fries, Hym. Eur., p. 396.

Slenderer than the type form, stem silvery, apex with white meal.

Cortinarius (Hygr.) decipiens. Fr.

Pileus ¾–1 in. across, flesh thin, dingy, conical, glabrous, shining, bay-brown, then brick-red when dry, at length depressed round the slightly fleshy, prominent, darker umbo; gills adnate, thin, rather crowded, reddish ferruginous; stem 2–2½ in. long, 1½ line thick, equal, covered with a separable pallid cuticle, pale brick-red within, imperfectly hollow; spores elliptical, dingy ferruginous, $8 \times 5\ \mu$.

Cortinarius (Hygrocybe) decipiens, Fries, Epicr., p. 312 Cke. Hdbk., p. 281, Cke., Illustr., pl. 798B.

In woods.

Stem usually straight, without any tinge of violet.

Var. **insignis.** Fries, Hym. Eur., p. 396.
Pileus paler, stem flexuous, glabrous; gills less crowded.

Cortinarius (Hygr.) germanus. Fr.

Pileus ½–⅔ in. across, flesh thin, conical then expanded, obtusely umbonate, hygrophanous, rather silky, even, brownish, pale tan when dry; gills adnate, rather distant, 2 lines broad, pale cinnamon; stem 2–3 in. long, 1–1½ line thick, equal, rather twisted and wavy, glabrous, lilac becoming pale, imperfectly hollow.

Cortinarius (Hygrocybe) germanus, Fries, Epicr., p. 312; Cke., Hdbk., p. 281; Cke., Illustr., pl. 844.

In beech woods.

Stem becoming silvery; pileus not striate. Smell strong.

*** *Stem becoming yellowish, usually growing pale.*

Cortinarius (Hygr.) detonsus. Fr.

Pileus 1–2 in. across, almost membranaceous, conical then expanded, subumbonate, silky then almost glabrous, striate to the middle when moist, colour bright yellow, when dry silky, even, and tan-colour; flesh thin, whitish; gills adnate, ventricose, distinct, rather distant, quite entire, all parts coloured alike, at first bright yellow, then reddish-cinnamon; stem 2–3 in. long, about 2 lines thick, soft, glabrous, pallid, equal or attenuated upwards, pale yellowish stuffed then hollow; spores 8 × 6 μ.

Cortinarius (Hygrocybe) detonsus, Fries, Epicr., p. 313; Cke., Hdbk., p. 282.

In damp pine woods amongst moss, &c.

Fragile, pale yellowish; stature, &c., almost as in *Cortinarius decipiens*. A much larger form occurs having the stem reddish-yellow. Easily distinguished by the languid yellowish colour. (Fries.)

Cortinarius (Hygr.) obtusus. Fr. (figs. 5, 6, 13, p. 16.)

Pileus ½–1½ in. across, rather membranaceous, conical then campanulate, at length expanded, obtusely umbonate, glabrous, margin striate, at first ferruginous-bay, soon cinnamon, pallid ochraceous or whitish-tan when dry, and in this

last condition sometimes torn into fibrils; gills adnate, ventricose, rather distant, very broad, thickish, the short ones narrower, connected by veins, ferruginous then tawny-cinnamon; stem 2–4 in. long, 2 lines thick or more, curved, flexuous (not undulated), attenuated at the base, fragile, with scattered, adpressed, white silky fibrils, for the rest almost glabrous, yellowish-tan when moist, truly white when dry; veil fibrillose, rarely conspicuous; spores subochraceous; spores 9 × 5 μ.

Cortinarius (*Hygrocybe*) *obtusus*, Fries, Monogr., ii. p. 111; Cke., Hdbk., p. 282; Cke., Illustr., pl. 845A.

In woods. Gregarious.

Veil entirely fibrillose, whitish, making the young pileus hoary and silky, commonly glabrous, but becoming broken up when dry. Umbo disappearing. With an evident smell. (Fries.)

Cortinarius (Hygr.) acutus. Fr.

Pileus about $\frac{1}{2}$–$\frac{2}{3}$ in. across, almost membranaceous, conical then campanulate, at length expanded, umbo acute and coloured like the remainder, at length depressed round the umbo, striate when moist, obsoletely fibrillose near the margin when young, glabrous when adult, yellowish honey-colour, rather shining, tan or white when dry, and looking silky; flesh very thin similarly coloured; gills adnate, thin, crowded, becoming more distant and free as the pileus expands, lanceolate, ochraceous cinnamon. Stem 3–4 in. long, 1–2 lines thick, equal, flexuous albo-fibrillose, at length glabrous, colour of the pileus when both moist and dry, hollow; spores 6 × 4 μ.

Cortinarius (*Hygrocybe*) *acutus*, Fries, Monogr., ii. p. 112; Cke., Hdbk., p. 282; Cke., Illustr., pl. 845A.

In mixed woods. Sometimes scattered, sometimes gregarious. With the habit of *Galera*, but remarkable for the acute umbo.

**** *Stem becoming dusky.*

Cortinarius (Hygr.) Junghuhnii. Fr.

Pileus about 1 in. across, disc slightly fleshy, remainder thin, convexo-plane, papillato-umbonate, striate to the middle

when moist, under a lens seen to be covere
white, persistent fibrils, slightly velvety, sh
tawny when dry; gills adnate, ventricose, 2
veined at the base, saffron brick-red; sten
lines thick, almost equal or attenuated and
base, stuffed then hollow, pale brick-red wit
darkest inside, outside shining, adpressedly
fibrils; veil brownish, obsolete; spores ellip

Cortinarius Junghuhnii, Fries, Epicr., p. 3
p. 282; Cke., Illustr., pl. 146A.

In woods amongst moss, &c.

Smell none.

Cortinarius (Hygr.) depressus. Fr.

Pileus about 2 in. across, flesh membra
convex, obtusely umbonate, at length al
depressed round the umbo, striate at the ma
ferruginous-brown, brownish tan when dr
rather crowded, broad, plane, thin, yellow
ferruginous, edge quite entire; stem 1–2 i
thick, equal or attenuated below, rigid, rath
even, whitish silky when young, then glabro
becoming brownish, hollow, veil scarcely ev

Cortinarius (Hygrocybe) depressus, Fries, Mo
Cke., Hdbk., p. 283; Cke., Illustr., pl. 860.

Damp places in woods, &c.

The prettiest and most distinct species of
genus, habit almost that of *Naucoria cucum*
resembling stale fish or cucumbers. Stem
length becoming blackish. (Fries.)

Cortinarius (Hygr.) milvinus. Fr.

Pileus $\frac{3}{4}$–$1\frac{1}{2}$ in. across, membranaceou
expanded, slightly umbonate, glabrous, st
broad, rather fleshy disc, fawn-colour becom
olive, pale tan-colour when dry, margin frin
white scales; gills adnate, rather distant, t
olive, veined at the base, about 3 lines broa
long, 2–3 lines thick, equal curved, pale fus
silky patches here and there from the wh
elliptical, 8–10 × 4 μ.

Cortinarius (Hygrocybe) milvinus, Fries, Epicr., p. 314; Cke., Hdbk., 283; Cke., Illustr., plate 846n.

In woods.

Gregarious, stem 2–3 in. long, 2 lines thick, not flexuous. Pileus $\frac{1}{2}$–1 in. broad, fawn-colour with an olive tinge. Strong scented. (Fries.)

• Cortinarius (Hygr.) fasciatus. Fr.

Pileus $\frac{1}{2}$–$\frac{2}{3}$ in. across, submembranaceous, conical, then expanded, the acute umbo blackish, the remainder brick-red, glabrous, minutely silky and becoming pale when dry; gills adnate, slightly ventricose, thin, truly distant, distinct, $1\frac{1}{2}$ line broad, cinnamon; stem variable, sometimes about 2 in. long, 1 line thick, straight; or 3–4 in. long, flexuous, and with the surface undulated, not cuticulose but splitting entirely into fibrils, hollow, glabrous, pallid brownish, then brownish cinnamon; spores cinnamon, $8 \times 5 \mu$.

Cortinarius (Hygrocybe) fasciatus, Fries, Monogr., ii. p. 114; Cke., Hdbk., p. 282; Cke., Illustr., pl 814.

Damp places in pastures under pines, &c.

Remarkable for the stem splitting longitudinally into fibres; resembling *C. flexipes* in colour, but in most respects nearest to *C. acutus*, from which it differs in the very distant gills.

Subgen. TELAMONIA.

ANALYSIS OF THE SPECIES.

I. PLATYPHYLLI.

Gills very broad, rather thick, more or less distant. Stem spongy or entirely fibrous.

* Stem and veil white or whitish.

** Stem and gills violet. Cortina or partial veil whitish, tinted violet, or universal veil white.

*** Stem and veil red or yellow. Gills tawny or cinnamon, not violet nor becoming brown.

**** Stem becoming brownish, veil fuscous or dingy, gills dark.

II. LEPTOPHYLLI.

Gills narrow, thin, more or less crowded. Pileus thin. Stem rigid outside, subcartilaginous, stuffed or hollow, often attenuated downwards.

* Stem whitish, pallid, not floccoso-scaly.

** Stem becoming violet.

*** Stem and pileus tawny or ferruginous.

**** Stem floccoso-scaly, and with the pileus brownish.

Subgen TELAMONIA.

I. PLATYPHYLLI.

Gills broad, thickish.

* *Stem and veil white or whitish.*

Cortinarius (Tela.) macropus. Fr.

Pileus about 3 in. across, flesh thin, greyish, convex then flattened, obtuse, margin at first inflexed, dry, hoary with minute squamules, then almost glabrous, brick-red at length becoming ferruginous; gills adnexed, very broad (½–1 in.), distant, sides not veined, sometimes crenate, at others quite entire, pallid then watery cinnamon; stem 3–6 in. long, ½–1 in. thick, fibrillose, dingy white, then the colour of the pileus, about equal, solid; veil distant, forming a narrow, interwoven white ring; spores obliquely elliptical, finely granulated, 8 × 5 μ.

Cortinarius (Telamonia) macropus, Fries, Monogr., ii. p. 71; Cke., Hdbk., p. 263; Cke., Illustr., pl. 788.

In damp woods, &c.

Cortinarius (Tela.) laniger. Fr.

Pileus about 3 in. across, fleshy, disc compact, hemispherical then expanded, obtuse, bright or dark tawny, sometimes becoming pale, at first floccoso-squamose, flocci

whitish, then almost glabrous, silky towards the margin; flesh thickish at the disc, soft, thin at the margin; gills adnate or slightly rounded, at first rather crowded, then subdistant, clear tawny-saffron, at length shining tawny; stem solid, stout, 2–4 in. long, equal or bulbous, ventricose when growing on pine leaves, more or less distinctly vaginate from the white veil which terminates above in a very soft, white, distinct ring, reddish-white within, base at length tawny; cortina above the ring very delicate.

Cortinarius (Telamonia) laniger, Fries, Mon., ii. p. 71; Cke., Hdbk., p. 264; Cke., Illustr., pl. 800.

In mossy pine woods, &c.

A beautiful and very distinct species. Strong scented. Analogous to *Cort. torvus* in the more or less peronate stem and ring, but resembling *Cort. plumiger* in the white, fasciculato-floccose squamules of the pileus. Commonly smaller than *Cort. bivelus*, and distinguished by the spreading, persistent, tumid ring. Pileus never gibbous, but the margin thin, whitish plumulose when young, then silky and almost glabrous. (Fries.)

Cortinarius (Tela.) bivelus. Fr.

Pileus 1½–3 in. across, fleshy, convex then expanded, obtuse, reddish-tawny, glabrous, but silky near the margin; gills adnexed, scarcely crowded, rather ventricose behind, 3 lines broad, clear tawny-cinnamon; stem about 3 in. long, ½–⅝ in. thick, somewhat bulbous and attenuated upwards, firm, dirty-white, flocculoso-squamulose up to the spurious, fugacious ring; spores obliquely elliptical, granular, 10 × 5–6 μ.

Cortinarius (Telamonia) bivelus, Fries, Epicr., p. 292; Cke., Hdbk., p. 264; Cke., Illustr., pl. 852.

In woods, &c.

Mild. Stem entirely spongy, not firmer outside, sometimes short and bulbous, sometimes elongated and attenuated, even, abrupt, becoming rusty inside. Pileus soft, absorbing moisture, but not truly hygrophanous, usually very smooth, shining, often with darker spots, now and then rivuloso-squamulose, at length pierced with depressions, rarely campanulate and lax. (Fries.)

Cortinarius (Tela.) bulbosus. Fr.

Pileus about 3 in. across, unequally fleshy, campanulate then expanded, obtuse or broadly gibbous, even or with the epidermis torn into squamules or fibrils near the margin, bay when moist, fuscous-tan when dry; flesh similarly coloured when moist, whitish when dry, compact at the disc; gills adnate, rather distant, broad, at first dark then brownish-cinnamon, never violet-tinted; stem 2–3 in. long, bulbous, paler than the pileus, vaguely peronate and imperfectly ringed from the white veil, solid; spores 8 × 3–4 μ.

Cortinarius (Telamonia) bulbosus, Fries, Monogr., ii. p. 73; Cke., Hdbk., p. 264; Cke., Illustr., pl. 852.

Agaricus bulbosus, Sow., t. 230.

In woods, amongst moss, &c.

Allied to *C. armillatus* and *C. brunneus*, resembling the first in colour and the second in size; differs in the shorter stem and the usually inconspicuous ring formed by the veil, differs from *Inoloma* in the hygrophanous pileus, and from *Hygrocybe* in the gills. Stem decidedly bulbous, base and inside somewhat saffron-colour, at length brick-red; pileus s ightly hygrophanous, often fibrillosely torn near the margin, flesh-coloured like the pileus, whitish when dry, distinct from *C. bivelus* in the darker colour. (Fries.)

Smell like that of radishes. Pileus 2–3 in. broad, fibrillose under a lens, brittle; margin thin. Gills rounded, sub-adnate, distinct, 2–3 lines broad. Stem 3–4 in. high, sub-fibrillose, in full grown specimens ferruginous at the base. (Fries.)

Cortinarius (Tela.) urbicus. Fr.

Pileus 1½–2 in. across, fleshy, convex then plane, glabrous, whitish-tan colour; gills emarginate, ventricose, 3 lines broad or even more, rather close, pale ferruginous; stem about 2 in. long, ¼–½ in. thick, equal, nearly smooth, peronate, pallid, villose above the narrow, white ring, solid.

Cortinarius (Telamonia) urbicus, Fries, Epicr., p. 293; Cke., Hdbk., p. 264; Cke., Illustr., pl. 818.

In grassy places.

Allied to *Cort. bivelus*, but readily distinguished by being glabrous and paler in colour.

Cortinarius (Tela.) licinipes. Fr.

Pileus 2–3 in. across, membranaceous, campanulate then convex, at length expanded, obtusely umbonate, usually becoming depressed round the umbo, even, glabrous, yellowish, pale tan when dry; gills adnate, very broad behind, up to ½ in., rather crowded, quite entire, watery cinnamon; stem 4–5 in. long, 3–4 lines thick, fragile, equal often flexuous, whitish, base with white down, the remainder with white floccose or plumose scales, naked when old, smooth above the distant, membranaceous ring, stuffed then hollow.

Cortinarius (Telamonia) licinipes, Fries, Epicr., p. 293; Cke., Hdbk., p. 265; Cke., Illustr., pl. 819.

In fir woods, when growing in damp places, amongst sphagnum, &c., the stem is elongated, shorter in dry situations.

Cortinarius (Tela.) microcyclus. Fr.

Pileus 1–1½ in. across, thin, almost membranaceous, plano-convex, reddish-fuscous, the minutely umbonate disc darker, pale and opaque when dry, even, glabrous, never torn; gills adnate, very broad, almost ovate in form, thin, at first lilac, then dark cinnamon; stem 1–2 in. long, base 3 lines, apex about 1½ line thick, but variable, from the incrassated base attenuated upwards, white or pallid, veil collapsed into a white zone round the stem.

Cortinarius (Telamonia) microcyclus, Fries, Monogr., ii. p. 78; Cke., Hdbk., p. 265; Cke., Illustr., pl. 865.

In pine woods, &c.

Allied to *Cort. decipiens* in colour and habit, but differing in the somewhat bulbous stem and the white ring. (Fries.)

** *Stem and gills violet, cortina whitish becoming violet, universal veil white.*

Cortinarius (Tela.) torvus. Fr.

Pileus 2–4 in. across, flesh thin except the disc, convex, margin at first incurved, then wholly expanded, obtuse, rather fragile, even, or the cuticle minutely broken up when dry, with depressed points when old, sometimes coarsely radiato-rugulose, at first hoary with minute fibrillose squamules, and marbled with the same hoariness when smooth, scarcely

hygrophanous, bay, bay-brown, or coppery-brown; flesh dingy, whitish when dry; gills somewhat adnate, thick, distant, plane, fragile, very broad (3–6 lines), violet at first, soon purplish-umber, finally dark cinnamon, edge quite entire, at length veined at the base; stem 3–5 in. long, ½–1 in. thick, short and bulbous when young, then elongated and subequal, when perfect sheathed and peronate to the middle by the adnate veil, above which the stem is nearly equal, pale violet, villosely cortinate when young, then fibrillose; whitish below the white, spreading ring, fibrillose, in fullest vigour floccosely scaly, base covered with white down, solid, then spongy, usually bored and eaten by larvae; spores, 10–12 × 7–8 μ.

Cortinarius (*Telamonia*) *torvus*, Fries, Epicr., p. 293; Cke., Hdbk., p. 265; Cke., Illustr., pl. 801; Kalchbr., pl. 21, f. 1.

In woods, especially beech.

Showy, commonly robust, stem at first bulbous, then elongated and equal; ring evident, subpersistent. Pileus bay, and with a violet tinge at first. There is a form having the gills rufous flesh-colour. (Fries.)

Klotzch's specimens are evidently the genuine form, figured by Bulliard; mine are slightly different, but clearly belonging to the same species. The youngest plants have no tinge of violet; but this is probably owing to their being found in very dry weather. Pileus in the variety 1¾ in. broad, obtuse, convex, at length plane, shining with a satiny lustre, at length sometimes rimulose, whitish tinged with umber, fleshy in the centre, the margin thin; portions of the veil persistent on the edge. Gills adnate, deep umber, distant, sometimes very slightly emarginate in old specimens. Stem 2½ in. high, ½ an in. thick, nearly equal or slightly attenuated below, paler than the pileus, hosed as it were, with the white veil; reddish within. Odour like that of *A. fastibilis*. (Berk.)

Cortinarius (Tela.) impennis. Fr.

Pileus 1½–2 in. across, fleshy, convex, obtuse, rigid, almost glabrous, colour almost brick-red, becoming pale; gills adnate, then emarginate, distant, thick, 3–4 lines broad, violet, soon purplish, at length watery cinnamon; stem 2–3 in. long, ⅓ in. thick at the apex, rather bulbous, pallid, the imperfect

ring and apex violet, whitish-cortinate, solid; spores, 10–11 × 7 μ.

Cortinarius (Telamonia) impennis, Fries, Epicr., p. 293; Cke., Hdbk., p. 265; Cke., Illustr., pl. 853.

In pine woods, &c.

Stem 2 in. long, ½ in. thick, often cylindrical, fibrillose, ring incomplete. Pileus fleshy, especially at the disc, at first sooty-umber, then brick-red or red (in the young stage *almost the colour of Collybia butyracea*), *not hoary*, silky round the margin when young, at length cracked. (Fries.)

Cortinarius (Tela.) lucorum. Fr.

Pileus 1½–2 in. across, convex then expanded, gibbous, margin wavy, even, bay with a tinge of brick-red when moist; flesh very thin except at the disc; gills emarginate, rather distant, about 3 lines broad, cinnamon with a transient tinge of violet; stem about 2 in. long, 3–4 lines thick, slightly clavate, very fibrillose, pallid, solid; veil forming a white distant zone on the stem, flesh like that of the pileus dingy ochraceous; spores elliptical, 10 × 5 μ.

Cortinarius (Telamonia) lucorum, Cke., Hdbk., p. 379; Cke., Illustr., pl. 1192.

Cortinarius (Telamonia) impennis, Fries, var. *lucorum*, Fries, Hym. Eur., p. 377.

On the ground in woods, &c.

Stem sometimes slightly curved, and tinged with violet above.

Cortinarius (Tela.) plumiger. Fr.

Pileus 2–3 in. across, flesh thin, conical when young, then campanulate, umbo broad, obtuse, very prominent, often cracked, dry, densely covered with white, floccose, feathery scales that are erect and squarrose, or after rain becoming depressed and silky, hygrophanous, fuscous with an olive tinge when moist, reddish-tan when dry; gills adnate, scarcely crowded, broad, violet at first, soon watery, then pure cinnamon, edge quite entire, similar in colour or tan-colour; stem remarkably clavate, 3–4 in. long, base 1 in. apex 5 lines thick, pale, watery white within; veil shining white, floccosely scaly on the stem, forming an imperfect ring at the apex, solid; spores 10 × 5–6 μ.

Cortinarius (*Telamonia*) *plumiger*, Fries, Epicr., p. 294; Cke., Hdbk., p. 266.

In woods.

Cortinarius (Tela.) scutulatus. Fr.

Pileus about 1 in. across, fleshy at the disc, margin thin, ovate then expanded, obtuse, purple-umber, brick-red when dry, at first silky and white near the margin, then becoming broken up into squamules; gills adnate, about 2–3 lines broad, rather distant, purple-violet; stem 3–4 in. long, ¼ in. thick, somewhat bulbous, rigid, dark violet outside and inside, solid, peronate and more or less ringed; spores elliptical, 7 × 3 μ.

Cortinarius (*Telamonia*) *scutulatus*, Fries, Epicr., p. 294; Cke., Hdbk., p. 266; Cke., Illustr., pl. 820A.

In damp woods, &c.

Smell like that of radishes, stem above the bulb, which is often wanting, cylindrical, apex often hollow, hence the fleshy disc of the pileus becomes umbilicate. Veil sometimes concentrically squamulose, sometimes almost absent, membranaceous ring obsolete. Edge of gills at first whitish then cinnamon. (Fries.)

Cortinarius (Tela.) evernius. Fr.

Pileus 2–4 in. across, thin, almost membranaceous, conico-campanulate then expanded, obsoletely umbonate, everywhere covered with a white, fibrillose, silky, adpressed veil, usually purple-bay when glabrous, very hygrophanous, brick-red when dry, becoming dingy pale ochraceous when old, cracked and torn into fibrils, very fragile; the very thin flesh similarly coloured; gills adnate, ventricose, very broad (½–1 in.), distant, purplish-violet, becoming pale, at length cinnamon; stem 3–6 in. long, ½ in. and more thick, equal or attenuate downwards, slightly striate, violet, becoming pale, obsoletely squamulose and indistinctly annulate from the veil; spores elliptical, granular, 10 × 7 μ.

Cortinarius (*Telamonia*) *evernius*, Fries, Monogr., ii. p. 77; Cke., Hdbk., p. 266; Cke., Illustr., pl. 821 and 865.

In damp pine woods, &c.

Smell not remarkable, resembling *C. elatior* in size, but not in any way allied, differing in the absence of the glutinous veil and also in colour. (Fries.)

Tufted or subgregarious. Pileus 1–2 inches broad, purple-brown, shining with a satiny lustre, umbonate, the umbo generally subumbilicate; flesh moderately thick in the centre. Gills very broad, at length subferruginous, distant, adnate for half their breadth. Stem 2½–4 inches high, ⅜ in. thick, undulated, silky, much paler than the pileus, with a few slight traces of the veil. Sowerby's plant and that of Fries seem to be the same; but if so, the former is not, as Fries supposes, merely the young state, but arrived at its full growth. (Berk.)

Cortinarius (Tela.) quadricolor. Fr.

Pileus 2–3 in. across, rather fleshy, thin, conical then expanded, umbonate, glabrous, at length with depressed spots, pale yellow then tawny, shining when dry; flesh thin, coloured like the pileus; gills adnate, distant, 3–4 lines broad, but thin, margin white, serrate, dark violet or purplish cinnamon; stem 3 in. long, 2–3 lines thick, equal, flexuous, rather rigid, fibrilloso-striate from the adpressed veil, which above collapses and forms an oblique white ring that eventually disappears, stuffed then hollow; spores 10–11 × 6–7 μ.

Cortinarius (Telamonia) quadricolor, Fries, Epicr., p. 295; Cke. Hdbk., p. 266; Cke., Illustr., pl. 867.

In beech woods, &c.

Agreeing with *C. hinnuleus* in size, but differing in colour. Gills sometimes violet. (Fries.)

*** *Stem and veil red or yellow. Gills tawny or cinnamon, not violet nor becoming brown.*

Cortinarius (Tela.) helvolus. Fr.

Pileus 2–3 in. across, flesh thin, convex then plane, obtuse or obtusely umbonate, glabrous, even, dark tawny-ferruginous, yellowish when dry, becoming cracked, the margin at first covered with the veil, regularly incurved; gills distinctly emarginate, 4 lines broad, distant, thick, base rather veined, opaque, tawny then tawny-cinnamon; stem variable in length, in the largest form 6–8 in. long and up to 1 in. thick, in the medium form 3 in. long, 4 lines thick, in the smallest form 2 in. long, attenuated at the base, apex 2–3

lines thick, solid, almost equal, not straight, fibrillose, with a narrow ring-like, rusty margined zone above formed from the veil, more or less ferruginous both outside and inside, solid; spores 6 × 5 μ.

Cortinarius (Telamonia) helvolus, Fries, Monogr., ii. p. 85; Cke., Hdbk., p. 267; Cke., Illustr., pl. 804B.

In wooded pastures, &c.

A small form occurs having the pileus ferruginous then becoming pale, disc darker. (Fries.)

Cortinarius (Tela.) armillatus. Fr.

Pileus 3–4 in. across, disc fleshy, remainder thin, campanulate then expanded, brownish brick-red, pale when dry; gills adnate or ventricose behind and appearing to be adnexed, 3–4 lines broad, distant; pale then dark cinnamon; stem 4–5 in. long, ½ in. thick above, bulbous or conical, fibrillose, pale, with several oblique red zones, solid, brownish within; spores 10 × 6 μ.

Cortinarius (Telamonia) armillatus, Fries, Epicr., p. 295; Cke., Hdbk., p. 267; Cke., Illustr., pl. 802.

In woods.

Allied to *Cort. haematochelis*, but distinguished by the distant gills, and by having more than one red ring on the stem.

Cortinarius (Tela.) haematochelis. Bull.

Pileus 3–4 in. across, fleshy at the disc, thin elsewhere, gibbous, silky-fibrillose, brownish brick-red, pallid when dry, campanulate then expanded; gills adnate or adnexed, crowded, thin, 2 lines broad, sometimes more, pale cinnamon; stem 4–5 in. long, ⅓ in. thick above, somewhat bulbous, attenuated upwards, pallid, with a single, distant, oblique red zone, solid; spores granular, 10 × 7–8 μ.

Cortinarius (Telamonia) haematochelis, Cke., Hdbk., p. 267; Cke., Illustr., pl. 803.

Agaricus haematochelis, Bulliard, Champ. France, t. 527, f. 1.

In woods.

Stature of *Cort. brunneus*, also resembing *Cort. armillatus*, but distinguished by having only one red zone on the stem.

Cortinarius (Tela.) praestigiosus. Fr.

Pileus 1½–2 in. across, almost membranaceous, flattened, striate up to the obtuse or acute umbo, at first dark then

light bay, becoming torn towards the silky margin; gills adnate, 2–3 lines broad, rather distant, tawny-cinnamon; stem 3–5 in. long, slender, very fragile, pale red, rather shining, with red squamules, hollow.

Cortinarius (Telamonia) paragaudis, var. *praestigiosus*, Fries, Epicr., p. 295; Fries, Hym. Eur., p. 379.

Under pines, &c. The typical form has not been found in this country.

Cortinarius (Tela.) croceo-fulvus. Fr.

Pileus 2–4 in. across, fleshy, convex then expanded, obtusely umbonate or gibbous, even, bright tawny-orange; gills adnate, slightly sinuate, 3 lines broad or more, rather distant, ferruginous; stem 3–4 in. long, ¼–⅜ in. thick, equal, yellow with a tinge of rufous, zoned with a rufous-orange line, the remains of the veil, solid, flesh like that of the pileus, bright yellow; spores obliquely elliptical, granular, 8–10 × 6 μ.

Cortenarius (Telamonia) croceo-fulvus, Fries, Epicr., p. 296; Cke., Hdbk., p. 379; Cke., Illustr., pl. 1193.

Agaricus croceo-fulvus, D. C., Fl. Fr., v. p. 49.

In woods.

Readily known by the bright tawny-orange pileus, and the clear yellow colour of the flesh.

Cortinarius (Tela.) limonius. Fr.

Pileus 2–4 in. across, truly fleshy, convexo-plane, obtuse, even and glabrous when moist, cracked and incised when dry; tawny-citron, yellowish-ochre and opaque when dry; flesh coloured like the pileus, not splitting; gills adnate, rarely emarginate, distant, for a long time yellow, at length tawny-cinnamon; stem 3 in. long, ½ in. thick, equal or attenuated at the base, where it becomes deep saffron, floccosely squamulose from the veil, apex sometimes with a coloured floccose veil, solid.

Cortinarius (Tela.) limonius, Fries, Monogr., ii. p. 80; Cke., Hdbk., p. 267; Cke., Illustr., pl. 804A.

In pine woods.

Smell none. Base ef stem at length saffron-colour, sometimes attenuated, at others slighty incrassated. Ring often floccose and radiating, but from the squamules on the stem

evidently a *Telamonia*. Pileus distinctly hygrophanous, not splitting. (Fries.)

Pileus 2–4 in. broad, when dry ochry-yellow, subsquarrose. Gills sometimes adnate, sometimes emarginate, veil rarely forming a perfect ring. Stem 2–4 in. high, ½ in. thick, firm, fibrillose, dull yellow sometimes saffron-red. (Fries.)

Cortinarius (Tela.) hinnuleus. Fr.

Pileus 1–2½ in. across, flesh very thin except at the subumbonate disc, conico-campanulate then expanded, glabrous, pallid tawny-cinnamon, tawny when dry; gills slightly emarginate, distant, 3–4 lines broad, tawny-cinnamon, edges quite entire; stem 3–4 in. long, 3–4 lines thick, rigid, attenuate below or subequal, tawny, the whitish silky veil forming a ring-like zone, stuffed; spores elliptical, granular, 10–12 × 7–8 μ.

Cortinarius (*Telamonia*) *hinnuleus*, Fries, Epicr., p. 296; Cke., Hdbk., p. 268; Cke., Illustr., pl. 805.

In woods, &c.

Very variable in size, stem sometimes short and equal, sometimes slender, elongated, and flexuous, at times brownish, up to 4 lines thick. Pileus varies to pallid and at length depressed, rarely silky near the margin. Gills plane, slightly connected by veins. Recedes from all the species in the subgenus in having a white veil. (Fries.)

Cortinarius (Tela.) gentilis. Fr. (fig. 9, p. 16.)

Pileus ½–1 in. across, flesh thin, conico-expanded then flattened, acutely umbonate, tawny-cinnamon, yellow when dry, cracked and incised, sometimes somewhat silky; gills adnate, thick, very distant, plane, connected by veins, coloured like the pileus at first, not changing colour when dry like the pileus and stem, hence every part of the fungus is coloured alike when moist, but differently coloured when dry; stem 3–4 in. long, 1–2 lines thick, equal or attenuated at the base, often curved, usually straighter than that of other species of similar size, fibrillose, tawny-cinnamon, yellow when dry; veil forming an oblique ring, sometimes arranged in several zones, sometimes yellow below the flocceso-squamulose ring; spores granular, 7–8 × 6 μ.

Cortinarius (*Telamonia*) *gentilis*, Fries, Monogr., ii. p. 87; Cke., Hdbk., p. 268; Cke., Illustr., pl. 806.

In pine woods, &c. Gregarious.

Pileus ½–3 in. broad, at first conic-obtuse, then more or less acutely umbonate, with frequently a depression round the umbo, cinnamon changing to a pale tawny, marked in decay with brown streaky blotches, shining, somewhat cracked, subfibrillose, sometimes with a few very minute silky scales. Gills very distant, thick, adnate, rounded behind, cinnamon or dark ferruginous. Stem 3 in. high, 2–3 lines thick, of the same colour as the pileus, nearly equal, at first marked with the remains of the woven spongy ring, fibrillose, wavy, at length hollow. (Berk.)

Cortinarius (Tela.) helvelloides. Fr.

Pileus ½–1 in. across, submembranaceous, convex then expanded, umbonate, almost glabrous, striate when in perfect condition, ferruginous, cracked and squarrose when mature, rather tawny when dry, sometimes fibrillose when young; gills adnate, very thick and remarkably distant, rather broad, distinct, at first violet-umber (never purplish), edge whitish, soon entirely umber-cinnamon, at length ferruginous; stem 2–3 in. long, 1–2 lines thick, equal, very much undulated and flexuous, somewhat ferruginous without any white; veil yellowish, forming a silkiness near the margin of the pileus, and an imperfect ring near the apex of stem, above which the stem is silky-white and shining; spores 7 × 5 μ.

Cortinarius (Telamonia) helvelloides, Fr., Epicr., p. 297; Cke., Hdbk., p. 268; Cke., Illustr., pl. 836.

In beech woods, &c., in damp places amongst rotten leaves. Inodorous. Form of pileus and colour variable, but unmistakable on account of the thick, very distant gills.

Cortinarius (Tela.) rubellus. Cooke.

Pileus 2–3 in. across, fleshy, campanulate then expanded, rufous-orange, darker at the umbo, disc fleshy, thin towards the margin, flesh reddish-ochre; gills adnate, sinuate, rather narrow, scarcely crowded, pale, then bright ferruginous-red; stem 3–4 in. long, ½ in. thick, pale above, darker below, marked with concentric dark ferruginous fibrillose bands, equal or attenuated upwards, solid; spores pyriform, minutely rough, 8 × 5 μ.

Cortinarius (Telamonia) rubellus, Cke., Grev
Cke., Hdbk., p. 268; Cke., Illustr., pl. 835.
In swampy places.
With somewhat the habit of a small form
but distinguished by the brighter-coloured
the fibrillose rings on the stem being dark
not vermilion.

**** *Stem becoming brownish, veil fuscous or c*

Cortinarius (Tela.) bovinus. Fr.
Pileus 3–5 in. across, flesh rather thick a
towards the margin and often splitting,
convex then expanded, obtuse or gibbous,
with point-like depressions when old, fragile
opaque, hygrophanous, watery cinnamon, ta
gills adnexed, up to ½ in. broad, not vein
rather distant, cinnamon, becoming dark; s
long, conspicuously bulbous, base 2 in., a
dingy pallid, girdled by a single brown zone
interwoven veil, scarcely peronate, brow
whitish above the brown zone, solid but very
Cortinarius (Telamonia) bovinus, Fries, Epic
Hdbk., p. 269; Cke., Illustr., pl. 822.
In pine and mixed woods, &c.

Cortinarius (Tela.) nitrosus. Cooke
Stinking. Pileus 2–3 in. across, fleshy, rat
convex, then expanded, undulate at the mar
or tawny, darker and brownish at the disc, s
into minute, somewhat concentric, darker sca
broad; somewhat distant, emarginate, viol
cinnamon; stem 2-3 in. long, ½ in. thick
ochraceous, darker at the base, paler than th
with concentric darker squamose bands, soli
tical, 12 × 4 μ.
Cortinarius (Telamonia) nitrosus, Cke., Grevi
Cke., Hdbk., p. 269; Cke., Illustr., pl. 837.
In mixed woods.
Flesh of pileus and stem pale brown. I
the strong nitrous odour and the banded ster

Cortinarius (Tela.) brunneus. Fr.

Pileus 3–4 in. across, unequally fleshy, disc obtusely umbonate and truly fleshy, the rest thin, campanulate then expanded, naked, innately fibrillose towards the margin, umber, dingy reddish-tan when dry, becoming more or less marked with depressed point-like punctures; flesh pallid brown; gills at first adnate then adnexed, ½ in. and more broad, broadest in the middle, thick, distant, transversely veined, dark purple-cinnamon, then brown, at length umber-cinnamon; stem clavate or attenuated upwards from the thickened base, 4 in. long, ½ in. thick above, elastic, brownish, with dense white striae, furnished towards the apex with a brownish-white ring-like zone formed by the dingy white veil; spores obliquely elliptical, granular, 10–12 × 6 μ.

Cortinarius (*Telamonia*) *brunneus*, Fries, Monogr., ii. p. 81; Cke., Hdbk., p. 269; Cke., Illustr., pl. 854 and 868.

In pine woods, &c.

Stature very variable; when growing in deep sphagnum swamps it is slender, stem up to 8 in. long, naked, brown, pileus small, 1–1½ in. broad, plane, obtusely umbonate, umber. (Fries.)

Our plate 868 agrees well with the figure by Fries in the Upsal Museum. It can scarcely be confounded with any other species. Spores pip-shaped, elliptical, 10–12 × 6 μ. (Cooke.)

Cortinarius (Tela.) brunneofulvus. Fr.

Pileus about 2 in. across, slightly fleshy, campanulate then expanded, obsoletely umbonate, even, glabrous, minutely fibrilloso-virgate from innate adpressed hairs under a lens, margin at first white fibrillose, tawny-cinnamon, hardly changing colour when dry; flesh thin, pale dingy tawny; gills adnate, but soon very ventricose, ⅓ in. and more broad, rather distant, distinct, soft, tawny-cinnamon, opaque; stem 3–4 in. long, 3–4 lines thick, attenuated upwards, fibrilloso-striate, almost glabrous when adult, pale tawny outside and inside; veil dingy white, forming a zone round the stem, but soon entirely disappearing, stem solid then soft and spongy within.

Cortinarius (*Telamonia*) *brunneo-fulvus*, Fries, Epicr., p. 298; Fries, Hym. Eur., p. 382.

In pine woods amongst moss, &c.

Closely allied to *Cortinarius brunneus*, but tawny-cinnamon. Stature of *Cort. evernius*. Much larger than *Cort. glandicolor*, from which it also differs in the tawny-cinnamon colour. I have never seen any trace of violet colour in my specimens. Flesh thin, dingy. (Fries.)

Cortinarius (Tela.) injucundus. Weinm.

Pileus 3–4 in. across, compact, convex then plane, obtuse, fuscous-cinnamon, fibrillose; gills emarginate, very broad, 4–5 lines, lilac-tan; stem 3–4 in. long, up to ¾ in. thick at the apex, clavate and attenuated upwards, colour of the pileus then tawny-yellow, solid; spores elliptical, granular, $10 \times 5\ \mu$.

Cortinarius (*Telamonia*) *injucundus*, Weinmann, Fl. Ross., p. 150; Cke., Hdbk., p. 269; Cke., Illustr., pl. 823.

In fir woods.

One figure seems to represent a form of this species, although not precisely the type. (Cooke.)

Cortinarius (Tela.) glandicolor. Fr.

Pileus ½–1 in. (rarely 2 in.) across, submembranaceous, conical then expanded, commonly obtusely umbonate, soon glabrous, margin slightly striate when moist, umber or cinnamon brown, tan-colour or dingy pale ochraceous when dry; flesh very thin, similarly coloured; gills adnate, very distant, rather thick, up to 4 lines broad, coloured like the pileus or umber, edge quite entire, coloured like the rest, rounded in front; stem 3–5 in. long, 2–3 lines thick, commonly straight, the surface sometimes undulated, naked, slightly striate, colour of the pileus, at length bay-brown, stuffed then hollow; veil forming a woven ring, white, soon entirely disappearing.

Cortinarius (*Telamonia*) *glandicolor*, Fries, Epicr., p. 298; Cke., Hdbk., p. 270; Cke., Illustr., pl. 789.

On the ground amongst moss, especially in pine woods.

Resembling in general appearance the subgenus *Dermocybe*, but the thickish, very distant gills and stature is altogether that of *Cortinarius* (*Tela.*) *gentilis*, from which the present species is however sufficiently distinct in the brown colour and straighter stem. (Fries.)

Var. **curta**, Fries, Monogr., ii. p. 91.

Stem stuffed, 1 in. long, flexuous, peronate with the white veil, cingulate; umbo becoming rather blackish.

Cortinarius (Tela.) punctatus. Fr.

Pileus ½–1½ in. across, somewhat membranaceous, conico-convex, glabrous, hoary, umber, tan-colour when dry, at length even, punctate; gills adnate, very distant, quite entire, 1–2 lines broad, cinnamon-brown; stem 2–3 in. long, 1–2 lines thick, equal, undulate, pale brown below, apex whitish, somewhat hollow; spores pip-shaped, 7 × 4 μ.

Cortinarius (Telamonia) punctatus, Fries, Epicr., p. 299; Cke., Hdbk., p. 270; Cke., Illustr., pl. 855.

In woods, especially beech.

Closely allied to *Cort. gentilis*, but distinct in the colour of every part, and in the obtuse or obtusely umbonate, convex pileus.

A. Stem somewhat hollow, 2–3 in. long, scarcely 1 line thick, slender, everywhere equal, tough, undulated, fuscous-cinnamon, fibrilloso-striate, base white, downy. Cortina somewhat interwoven, pale fuscous, evanescent. Pileus rather membranaceous, conico-convex, umbo scarcely prominent, ½ in. broad, glabrous, even, umber, hoary, becoming pale tan when dry, not incised. Gills adnate very distant, with a decurrent tooth, ventricose, almost 3 lines broad, brownish cinnamon, all one colour and quite entire. B. Form more typical; stem shorter, pileus broader, with minute point-like depressions, gills less distant. (Fries.)

II. LEPTOPHYLLI.

Gills narrow, thin, more or less crowded.

* *Stem whitish, not floccosely scaly.*

Cortinarius (Tela.) triformis. Fr.

Pileus 2–4 in. across, flesh thin, convex then plane, somewhat umbonate, fibrillose becoming smooth, opaque, colour various, at first brownish or livid-yellowish, dirty tan when dry, hygrophanous, margin thin; gills rounded behind and adnexed, rather crowded, thin, distinct, yellowish honey-

colour then pale cinnamon; stem 3 in. lor
thick, fragile, clavate or somewhat bulbous
pallid, stuffed and spongy inside, ring white
apiculate, 10 × 6 μ.

Cortinarius (Telamonia) triformis, Fries, E
Eur., p. 382; Cke., Hdbk., p. 270; Cke.,
Cort. triformis, var. *Schaefferi*).

In woods.

Common in pine and mixed woods, assu
forms, as follows:—

A. *Schaefferi*. In beech woods. Ste
stuffed, spongy within, 3 in. long, ½ in. th
glabrous, pallid, the veil forming an in
white ring. Pileus unequally fleshy, m
then plane, obtuse or slightly gibbous, sup
almost glabrous, at length with depre
broad, always even, opaque, very hy
colour when young, then yellowish or
ochraceous when dry; gills adnate,
emarginate, 4 lines broad, connected by ve
thin, watery honey-colour, then watery ci

B. *Melleopallens*. In pine woods. S
tenuated, soft, imperfectly hollow, fragile,
yellow without and within, glabrous exce
by the veil as in *Cort. brunneus*. Pil
obtuse or obtusely umbonate, at first w
glabrous, even, fuscous then honey-colo
dry; margin pellucidly striate; flesh w
rather crowded, distinct, yellowish then a
Habit of *Cort. armeniacus*, but paler, &c.

C. *Fusco-pallens*. Under pines. Stem
at the base, 3 in. long, 3–4 lines thick, a
brownish-white, ring as in the previous
obtuse, fuscous becoming pale, passing wh
coloured tan. Gills adnate, 1–2 lines b
then darker. Easily distinguished among
constant dingy and watery pallid, almost
the thin rather crowded gills. (Fries.)

Cortinarius (Tela.) biformis. Fr.

Pileus 1½–3 in. across, flesh very thin

conical then campanulate, at length flattened, acutely umbonate, even, glabrous, rarely with fugacious fibrils, dark or ferruginous-brown, pale bay and shining when dry; gills adnate or emarginate, narrowed behind, connected by veins, 3 lines broad, rather crowded, watery cinnamon, at first greyish, edge crenulated; stem 2–4 in. long, thinner downwards, base 2, apex 2–4 lines thick, distinctly striate, adpressedly fibrillose, colour not white, but paler than the pileus, firm, stuffed; ring evident, white, commonly interwoven, oblique; spores 12 × 15 μ.

Cortinarius (Telamonia) biformis, Fries, Epicr., p. 299; Cke., Hdbk., p. 270; Cke., Illustr., pl. 869.

In mixed woods.

More slender than *Cort. triformis*, more rigid, moist, scarcely hygrophanous, ring sometimes obsolete. Habit of *Cort. castaneus*. (Fries.)

** *Stem becoming violet.*

Cortinarius (Tela.) periscelis. Fr.

Pileus 1–2 in. across, campanulate then convex, umbonate, lilac, with a white silkiness, umbo fleshy, the rest membranaceous; gills broadly adnate, crowded, narrow, pallid then dark ferruginous, stem 4 in. long, 5 lines thick, equal, fibrillose, lilac, somewhat ringed with the brownish interwoven veil, hollow; spores 7–8 × 4–5 μ.

Cortinarius (Telamonia) periscelis, Fries, Epicr., p. 300; Cke., Hdbk., p. 271; Cke., Illustr., pl. 838.

In swamps, under beech-trees, &c.

Stem 3–4 in. long, 2–3 lines thick, straight, becoming fuscous when dry, base with white down. Pileus 2 in. broad, hygrophanous. (Fries.)

There are usually several indistinct brownish rings on the stem.

Cortinarius (Tela.) flexipes. Fr.

Pileus ½–1½ in. across, flesh thin, at first acutely conical, then expanded and acutely umbonate, becoming depressed round the umbo, fibrillosely hoary, then naked, at first very dark bay-brown, then with violet shades, but becoming pale, yellowish in dry weather, tan when old, lacerated; gills

adnate, rather distant, broad, purple or
cinnamon, margin whitish; stem 4 in. lo
equal, flexuous, floccosely squamose below
terwoven white ring, pallid, apex and som
violet, stuffed.

Cortinarius (Telamonia) flexipes, Fries,
Cke., Hdbk., p. 271; Cke., Illustr., pl. 824

In pine and other woods, &c.

A very variable species; when old resem
in the variation of colour.

Cortinarius (Tela.) flabellus. Fr.

Pileus ⅔–1 in. across, submembranaceo
bonate, at first conical then expanded, oli
covered with white, superficial scales, sil
when dry, becoming cracked and torn
adnate, connected by veins, crowded, lin
olive, then ferruginous; stem at times s
typically truly elongated, 3–4 in., equa
flexuous, flocceso-squamose, pallid, apex v
inferior and forming the scales on the
terminating in a perfect, entire ring, som
and oblique, stuffed then hollow.

Cortinarius (Telamonia) flabellus, Fries,
Cke., Hdbk., p. 271; Cke., Illustr., pl. 824

On the ground in damp places.

Gregarious; smell strong, somewhat res

*** *Stem and pileus tawny or fer*

Cortinarius (Tela.) psammocepha

Every part tawny-cinnamon, same colo
and stem becoming pale and rather g
pileus about 1 in. across, flesh thin, co
at length umbonate and revolute, cortex
minute furfuraceous squamules; gills sinua
crowded, 2 lines broad, at length dark,
stem about 1–1½ in. long, 2 lines thick,
squamulose and peronate from the veil,
above, stuffed then hollow; spores 6 × 4

Cortinarius (Telamonia) psammocephalus, Fries, Monogr., ii. p. 80; Cke., Hdbk., p. 271; Cke., Illustr., pl. 839A.

Agaricus psammocephalus, Bulliard, Champ., t. 531, fig. 2 (inside tawny, not white as in the fig.).

In pine woods, &c.

Stem about 1 in. long, apex naked, even, ring not distinct, but evidently a *Telamonia*. Pileus about 1 in. across; gills dark, sometimes with a decurrent tooth. (Fries.)

Cortinarius (Tela.) iliopodius. Fr.

Pileus 1–2 in. across, rather fleshy, conical, then expanded, rather umbonate, at first silky-fibrillose, almost glabrous when mature, cinnamon, tan-colour when dry; gills adnate, rather crowded, thin, cinnamon; stem sometimes short and equal, commonly elongated to 3–4 in., flexuous, equal, elastic, tawny, sheathed to the middle with the white, silky veil which terminates above in a ring, naked and fibrilloso-striate above the ring, yellowish-cinnamon inside; spores, 7–8 × 4 μ.

Cortinarius (Telamonia) iliopodius, Fries, Monogr., ii. p. 88; Cke., Hdbk., p. 272; Cke., Illustr., pl. 839B.

In woods.

Stem sometimes short, at others elongated and flexuous, not attenuated at the base, at length brownish. Pileus opaque, 1–2½ in. broad, sometimes brownish, obtuse. Very variable, and some of the forms difficult to define. (Fries.)

Pileus ¾ in. broad, at first conic, with the silky veil attached to the margin, then convex, rather acutely umbonate, the umbo cinnamon, then brownish changing to ochraceous, subcarnose, silky especially on the margin, which is pellucid when moist. Gills at first pale, changing to dark-cinnamon. Stem 2 in. or more high, scarce 1 line thick, rufescent, pruinose or sericeo-squamulose, moderately tough, at length hollow. My specimens described above are smaller than the more usual state, approaching in this respect *A. cucumis*, now removed to the tribe *Galera*. Taste not acrid. Gills moderately broad. According to Fries, the pileus is from ½–1 in. broad. Stem 2–4 in. high. Taste approaching to that of radishes. (Berk.)

Cortinarius (Tela.) incisus. Fr.

Pileus ½–⅓ in. across, slightly fleshy, conico-convex then expanded, umbonate, naked, soon innately fibrillose or

squamulose, hygrophanous, ferruginous, tawny when dry: gills adnate, distinct, scarcely crowded, ferruginous-cinnamon, about 1 line broad; stem about 1 in. long, equal, fibroso-fibrillose, ferruginous, veil white, woven into a ring or obsolete; spores elliptical, 5 × 3 μ.

Cortinarius (*Telamonia*) *incisus*, Fries, Epicr., p. 301; Cke., Hdbk., p. 272; Cke., Illustr., pl. 807.

On the ground.

In Cooke's figure quoted above, called *Cort.* (*Tela.*) *incisus*, Fr., var. B, the margin of the pileus is much split and often upturned, and the stem white and curved.

Gregarious, small, form variable: stem 1 in. long (in B, 2–4 in.), 1–2 lines thick; pileus commonly tawny-ferruginous, but when young also bay, olive-brown, &c., very squamulose and cracked into shreds. (Fries.)

In dry pine-woods, scattered, but also in damp meadows, dried up turf-bogs, &c., gregarious, subcaespitose; everywhere tawny-ferruginous, opaque, smell faint. Stem somewhat stuffed, sometimes short, about 1 in., sometimes elongated, flexuous, entirely fibrous in damp places, fibrillose, not polished externally. Pileus rather fleshy, form variable, acutely or obtusely umbonate, convex then expanded, naked when young, then (especially in dry weather) torn into fibrils, but even and shining when scorched by the sun: gills adnate, rather distant, ferruginous-cinnamon. Differs from *Cort. gentilis*, &c., in being darker ferruginous, and especially in the white, zoned veil. A form exists having the pileus olive-brown. (Fries.)

**** *Stem floccosely scaly, and like the pileus becoming dusky.*

Cortinarius (Tela.) hemitrichus. Fr.

Pileus 2–3 in. across, slightly fleshy, convex then plane, umbonate, fuscous, brownish-tan when dry, densely covered near the margin with superficial silky fibrils; gills adnate, crowded, 2 lines broad, tan-colour then cinnamon; stem 1½–2 in. long, 2–3 lines thick, almost equal, pale fuscous, flocoso-squamose from the white veil, and ringed, hollow; flesh like that of the pileus brownish; spores, 6–7 × 3–4 μ.

Cortinarius (*Telamonia*) *hemitrichus*, Fries, Epicr., p. 302; Cke., Hdbk., p. 272; Cke., Illustr., pl. 825.

Amongst moss, fallen leaves, &c.

Pileus splitting, 2–3 in. broad, resembling *Cort. castaneus*, at first with erect, white cirrhose fibrils, becoming prostrate and silky fibrillose, at length almost glabrous, sometimes obtuse, sometimes acutely umbonate, also becoming umbilicate from the hollow apex of the stem. Stem remarkably floccose, and a membranaceous ring not rarely present. (Fries.)

Cortinarius (Tela.) stemmatus. Fr.

Pileus about 1 in. across, slightly fleshy, convex, then expanded, obtuse, bay, hoary-silky towards the margin, pale when dry, fibrillose; gills adnate, crowded, bay, 1½ line broad; stem about 3 in. long, 2–3 lines thick, flocculoso-squamulose with an indistinct ring, ferruginous-bay, imperfectly hollow.

Cortinarius (Telemonia) stemmatus, Fries, Monogr., ii. p. 90; Fries, Hym. Eur., p. 385; Cke., Hdbk., p. 273; Cke., Illustr., pl. 840A.

In damp woods.

Allied to *Cortinarius uraceus*, from which it differs in the flocculoso-squamulose stem.

Cortinarius (Tela.) rigidus. Fr.

Pileus ½–1½ in. across, rather fleshy, conical or convexo-expanded, acute or obtusely umbonate or quite obtuse, at at length depressed round the umbo, glabrous, even, becoming pellucidly striate at the margin, cinnamon-bay, yellowish or fuscous-tan when dry, sometimes becoming broken up into squamules when old; flesh not cracking, colour of the pileus; gills adnate, more or less crowded, often connected by veins, plane, entirely cinnamon-colour; stem 2–4 in. long, 2 lines thick, equal, short and straight, or elongated and flexuous, brownish or the colour of the pileus, becoming pale, adpressedly fibrillose, not floccose, stuffed, soon hollow.

Cortinarius (Tela.) rigidus, Fries, Epicr., p. 302; Cke., Hdbk., p. 273; Cke., Illustr., pl. 791.

In damp woods, &c. Strong scented.

Cortinarius (Tela.) paleaceus. Fr.

Pileus ⅔–1 in. across, submembranaceous, conical then expanded, acute or obtusely umbonate, at first silky with white,

superficial squamules, then glabrous,
phanous, brown when moist, dingy tar
the disc coloured like the pileus, elsewl
gills adnate, broad, crowded, at first
cinnamon; stem about 3 in. long, 1 lin
surface undulated, brownish both outs
when young, base with white down, furn
white squamules, apex with a white
7–8 × 3 μ.

Cortinarius (*Telamonia*) *paleaceus*, F
Cke., Hdbk., p. 273; Cke., Illustr., pl. 8

Damp places in beech woods, &c.

Much more slender than *Cort. rigi*
umbonate. Differs from *Cort. iliopodii*
floccoso-squamulose and not tawny insid

Cortinarius (Tela.) iris. Massee

Pileus about 1 in. across, hemisphe
acutely umbonate, pale ochraceous-b
covered with minute white fibrils, usu
margin, flesh thin; gills rather crowded, n
much cut out behind and slightly attac
then bright orange-brown, margin entir
conical, ¼ in. thick at base, 2 lines at t
the bright-brown fibrillose ring orange
with pointed fibrillose squamules of th
the ring smooth and silky, violet, becom
larly coloured; spores elliptical, obliqu
orange-brown, 10 × 5 μ; cystidia abse

On the ground in woods; Carlisl
Carlyle.)

Solitary or in clusters of 2–4. Most
(*Telamonia*) *paleaceus*, but distinguished
conical, straight, solid stem, size of spor

Cortinarius (Tela.) Cookei. Qu

Pileus up to ½ in. across, tawny-yel
paler, shining, woolly veil, conical, umb
adnate, violet then reddish, at lengt
1 line broad; stem 1½–2 in. long, 1 line t
pale, with several yellowish floccose z
elliptical, 7 × 3·5 μ.

Cortinarius (Telamonia) Cookei, Cke., Hdbk., p. 273; Cke., Illustr., pl. 840B.

Cortinarius (Hygrocybe) Cookei, Quelet, Bull. Soc. Bot. France, p, 288 (1878); Grevillea, t. 128, f. 3.

In woods.

Subgen. DERMOCYBE.

ANALYSIS OF THE SPECIES.

* Gills at first whitish or pallid.

** Gills at first violet, becoming purplish.

*** Gills shining cinnamon, red, or yellow. Stem and fibrillose cortina coloured. Elegant.

**** Olivaceous, veil dingy, or pale fuscous. Pileus not torn into scales.

* *Gills at first whitish or pallid.*

Cortinarius (Dermo.) ochroleucus. Fr.

Pileus 2–3 in. across, flesh rather thick except at the margin, convex; gibbous then obtuse, almost glabrous, even, whitish, with a pale ochraceous tinge; gills slightly adnexed, nearly free, crowded, 3–4 lines broad, narrower in front; whitish then ochraceous-tan; stem 2–3 in. long, 4–6 lines thick, solid, firm, ventricose or almost equal, whitish, apex fibrillose above; spores elliptical, 8 × 4–5 μ.

Cortinarius (Dermocybe) ochroleucus, Fries, Epicr., p. 284; Cke., Hdbk., p. 257; Cke., Illustr., pl. 775.

Agaricus ochroleucus, Schaeffer, t. 34.

In woods.

Inodorous, taste rather bitter, not unpleasant. Stem 3 in. long, 4–5 lines thick; pileus 2 in. across, silky under a lens. (Fries.)

Cortinarius (Dermo.) decumbens. Fr. (figs. 10–11A, p. 16).

Pileus 1–1½ in. across, rather fleshy, firm, convex then plane, gibbous then obtuse, even, glabrous, at times almost

white, at others yellowish, shining, not adnexed, crowded, 2 lines broad, thi colour, at length ochraceous-cinnamo stem stuffed then hollow, 1–2 in. long, ascending, white, smooth, base clavate fugacious; spores 8 × 5 μ.

Cortinarius (*Dermocybe*) *decumbens*, Fr Cke., Hdbk., p. 257; Cke., Illustr., pl. 8

In woods and grassy places.

Small, firm, characterised by the ascen

Cortinarius (Dermo.) riculatus.

Pileus 2–3 in. across, fleshy, margin slightly gibbous, fundamental tint ho colour is most conspicuous at the disc, delicately silky or floccose from the v adpressed; flesh whitish; gills adnate, c broad, at first tan-colour then watery 2–3 in. long, base ½ in., apex 3 lines t pallid-white; veil evident, pallid.

Cortinarius (*Dermocybe*) *riculatus*, Fri Fries, Hym. Eur., p. 366.

In pine woods.

Stem spongy within, thickened and sc hollow above. There is no tinge of grey

Cortinarius (Dermo.) tabularis.

Pileus 3–4 in. across, equally fleshy, co gibbous, at length remarkably flatte brownish-tan, becoming paler, at first ceedingly delicate, white down from the margin, then entirely glabrous; flesh w emarginate, crowded, thin, 3 lines broa colour, rarely at first with a slight and grey; stem stuffed, becoming hollow, t or attenuated from the base, 2–3 in. lo erect, sometimes flocosso-squamose, son almost glabrous, white then pallid; veil

Cortinarius (*Dermocyba*) *tabularis*, Fries, Hdbk., p. 257; Cke., Illustr., pl. 783.

In woods.

Larger than *C. anomalus*, paler, more glabrous; gills at first whitish or with a transient shade of grey, sometimes becoming somewhat ferruginous. (Fries.)

Cortinarius (Dermo.) camurus. Fr.

Pileus 2–3 in. across, very unequally fleshy, disc rather thick, but from the middle almost membranaceous, the broad, obtuse umbo often oblique, cracked when dry, pale hoary-brown, not hygrophanous but becoming pale yellowish, the umbo darkest; flesh white; gills variously attached owing to the oblique pileus, sometimes broadly adnate on one side, sometimes almost free, crowded, about 3 lines broad, thin, greyish-tan, then watery cinnamon or brownish, edge quite entire, similarly coloured; stem imperfectly hollow, equal, 3 in. long, 4 lines thick, always ascending or twisted, even, glabrous or fibrillose below, white outside and inside, apex naked and silvery-shining; spores 8–9 × 6–7 μ.

Cortinarius (Dermocybe) camurus, Fries, Epicr., p. 285; Cke., Hdbk., p. 257; Cke., Illustr., pl. 784.

In woods.

Caespitose, very fragile, stem 3 in. long, 3–4 lines thick, twisted or ascending, longitudinally adpressedly fibrillose downwards. Pileus unequally fleshy, margin somewhat membranaceous, soon glabrous, but not hygrophanous, 2–3 in. broad, often cracking, at length yellowish, disc darkest, flesh white. Gills 2–3 lines broad, edge coloured like the rest, quite entire, never grey. (Fries.)

Cortinarius (Dermo.) diabolicus. Fr.

Pileus 1 in. and more across, thin, hemispherical, obtuse then gibbous, dry, fragile, cracking, at first brownish with a grey bloom, then glabrous and yellowish-brown; gills adnate, separating and then appearing somewhat emarginate, rather crowded, 2–3 in. broad, firm, very pale grey, soon whitish, at length tan-colour; stem 3 in. long, commonly thin, about 2 lines, but sometimes up to 5 lines thick, attenuated towards the base, glabrous, pale, apex grey; veil fugacious; spores elliptical, 10–12 × 7 μ.

Cortinarius (Dermocybe) diabolicus, Fries, Epicr., p. 285; Cke., Hdbk., p. 258; Cke., Illustr., pl. 816 B.

In beech woods, &c.

Called *diabolicus* because it is interme
between two sections. Pileus often une
odorous. (Fries.)

* *Gills at first violet, becoming*

Cortinarius (Dermo.) caninus. I
Pileus 3–4 in. across, equally fleshy, n
cracking, convex then flattened, obtuse, l
first near the margin, glabrous when adı
fuscous or brown, in age generally rufou
when dry: flesh white, becoming yello
ginate, rather distant, thin, 3–4 lines broa
then cinnamon; stem 3 in. and more lo
crassated at the base, somewhat bulbo
villose, pallid then white, apex violet, s
within, then hollow; spores 8 × 5–6 μ.
Cortinarius (Dermocybe) caninus, Fries,
Cke., Hdbk., p. 258; Cke., Illustr., pl. 765
In woods.
Allied to *Cort. tabularis*, which differs i
anomalus; the latter, however, differs in
somewhat ringed stem, and the colour of t
to rufescent. (Fries.)

Cortinarius (Dermo.) myrtillinus.
Pileus 2–3 in. across, thin, tough, gibbc
smoke-colour, never becoming rufescent, de
flesh watery fuscous when moist, white w
the apex of the stem; gills adnate, rat
amethyst-blue, scarcely changing colour,
stem 2 in. or more long, 3–4 lines thick,
externally tough, whitish, with a white
veil scarcely evident; spores elliptical, 10
Cortinarius (Dermocybe) myrtillinus, Frie
Cke., Hdbk., p. 258; Cke., Illustr., pl. 817
In beech woods, &c., near trunks.
Colour and habit of *Tricholoma nuda*; fl
brown, then white, violet at the apex of
not rufescent, nor the gills with a purpl
peronate. (Fries.)

Cortinarius (Dermo.) azureus. Fr.

Pileus 1½–3 in. across, fleshy, convex then plane, obtuse, with a silky sheen, atomate, lilac, hoary; gills very slightly emarginate then decurrent, rather crowded, bright bluish-violet, 2–3 lines broad; stem 2–3 in. long, base incrassated, ¼–½ in. thick, glabrous, slightly striate, villose, sky-blue, becoming whitish, stuffed; spores broadly pip-shaped, granular, 9 × 6 μ.

Cortinarius (Dermocybe) azureus, Fries, Epicr., p. 286; Cke., Illustr., pl. 766.

Amongst leaves and moss in woods.

Solitary, elegant, flesh of stem blue, of pileus white; not splitting nor hygrophanous. Stem rather fragile, often twisted, bright sky-blue, 3 in. long, 4 lines thick; pileus 1½–2 in. broad, convexo-plane, at first lilac, then fuscous and pallid. Gills 2 lines broad, thin, at first slightly emarginate, then decurrent. (Fries.)

The figure given by Cooke does not agree in all particulars with the description by Fries, yet it appears to be a form of the present species.

Cortinarius (Dermo.) albocyaneus. Fr.

Pileus 1½–2 in. across, fleshy, convex then plane, obtuse, with an evanescent, silky pellicle, becoming smooth, white then yellowish, gills emarginate, about 3 lines broad, crowded, at first bluish-purple, then somewhat ochraceous; stem 3–4 in. long, ½–¾ in. thick at the base, somewhat clavate, whitish, naked, stuffed; spores elliptical, size variable, 6–10 × 4–7 μ.

Cortinarius (Dermocybe) albocyaneus, Fries, Monogr., ii. p. 62; Cke., Hdbk., p. 259; Cke., Illustr., pl. 748.

In beech woods, &c.

According to Cooke's figure the present species is sometimes slightly fasciculate, and the gills grey then pale cinnamon. Veil cinnamon.

This species, along with *C. tabularis* and *C. caninus* form a very natural section, whose infinity of form is with difficulty defined. The present species runs close to *C. alboviolaceus*, from which it differs in the naked stem, the obtuse silky pileus that eventually becomes glabrous (not innately-fibrillose), gills crowded, purplish-blue then ochraceous, flesh of pileus white. From *C. anomalus* the present species differs

in the firmer, somewhat club-shaped stem, flattened pileus (not gibbous), at first white then yellowish, broader gills at length somewhat ochraceous. (Fries.)

Cortinarius (Dermo.) anomalus. Fr.

Pileus 1–2 in. across, flesh thin, remarkably convex then expanded and gibbous, smoky then with a rufous tinge, hoary from evanescent fibrils, at length yellowish, not hygrophanous; flesh white when dry, not splitting; gills sometimes adnate, at others emarginate, with a decurrent tooth, thin, crowded, more or less tinged violet or greyish-purple, at length cinnamon; stem stuffed then hollow, 2–3 in. long, 3 lines thick, attenuated, slightly peronate, fibrillose or rather squamulose, violet above, whitish downwards, at length becoming pale and yellowish; spores broadly elliptical, 8–9 × 7 μ.

Cortinarius (Dermocybe) anomalus, Fries, Monogr., ii. p. 62; Cke., Hdbk., p. 259; Cke., Illustr., p. 776.

In woods.

Gregarious, small, flesh watery, veil coloured, gills sometimes emarginate, sometimes decurrent, violet, purplish, or grey, always thin and narrow. In pine woods it is sometimes more slender, stem thin, equal, glabrous, and flexuous. (Fries.)

Pileus 1–2 in. broad, very obtuse, sometimes broadly but very flatly umbonate, tinged at first with violet, minutely silky so as to present a white satiny appearance, gradually changing to ochraceous or slightly tawny; flesh thick, except at the extreme margin, which has often traces of the arachnoid veil dusted with the sporules. Gills close rounded behind, at first violet, at length pale ferruginous. Stem 2½ in. high, ⅜ in. thick, in the middle subbulbous, more or less tinged with violet, solid, fibrillose with more or less distinct transverse closely-pressed brownish scales, which originate in the veil; the top is adorned with the descending fibres of the veil, which form a spurious ring dusted with the sporules, and beneath this there is sometimes another red circle which is the true ring. (Berk.)

Cortinarius (Dermo.) spilomeus. Fr.

Pileus about 1 in. across, convex then expanded, gibbous, almost glabrous, not hygrophanous, rufous or tan-colour;

gills adnate or emarginate, crowded, narrow, thin, quite entire, grey or violet becoming pale, at length watery cinnamon; stem hollow, almost equal, about 2 inches long, 1–2 lines thick, whitish-lilac, elegantly variegated with rufous or tawny scales, apex cortinate, white; spores obliquely elliptical, 6 × 7 μ.

Cortinarius (*Dermocybe*) *spilomeus*, Fries, Monogr., ii. p. 63; Cke., Hdbk., p. 259.

In woods.

Commonly caespitose. Allied to *C. anomalus*, but smaller and more slender, and easily distinguished by the scaly stem.

Pileus 1 in. broad, slightly fleshy, colour various, when young whitish, then ferruginous tinged with fuscous, yellowish when dry. Gills violet, then lilac, at length cinnamon. Stem 2–4 inches high, 2–3 lines thick, white tinged with violet. (*Fries.*)

Cortinarius (Dermo.) lepidopus. Cooke.

Pileus 1–2½ in. across, flesh thin except at the disc, convex then expanded, gibbous, umber with a tinge of violet near the margin, becoming rufescent at the disc, flesh whitish, with a faint tinge of violet, and a darker line near the gills; gills adnate, rather crowded, 2 lines broad, thin, violet then cinnamon; stem 3–4 in. long, ⅓–½ in. thick at the base, attenuated upwards, becoming hollow when old, violet at the apex, dirty white below, with concentric, fibrillose, darker bands, flesh with a pale lilac tinge above, and dirty white below; veil whitish with a tinge of violet; spores ovate, sometimes almost globose, with an apiculus, 9 × 6 μ.

Cortinarius (*Dermocybe*) *lepidopus*, Cke., Grev., xvi. p. 43; Cke., Hdbk., p. 259; Cke., Illustr., pl. 850.

Heathy ground in woods, &c.

Colour of pileus variable in the shade of brown, sometimes pale. Allied to *C. anomalus*, but resembling *C. spilomeus* in the banded stem, although less distinct, and of a different colour. Stem often wavy. Gregarious or fasciculate.

* *Gills bright cinnamon, red, or yellow.*

Cortinarius (Dermo.) miltinus. Fr.

Pileus 1½–2 in. across, thin, convex or lentiform then

expanded, obtuse or broadly gibbous
polished, cinnamon-bay or dark cin
cracking at the disc, when dry the disc
brick-red, shining; flesh watery when
gills adnate, 1–1½ line broad, almost lin
thin, bright reddish-cinnamon then fer
in. long, 2–3 lines thick, very tough, sub
attenuated upwards, often twisted, bas
cinnamon or reddish, with red fibrils, ap
the red veil; spores elliptical, 6 × 4 μ.

Cortinarius (Dermocybe) miltinus, Fri
Cke., Hdbk., p. 260; Cke., Illustr., pl.

In woods.

Smell none. With the general aspe
the colour of *C. cinnamomeus*. Stem dis
2–3 in. long, 2–3 lines thick, apex v
cortina or veil. Pileus obtuse or br
broad, pale when dry, brick-red, disc
flesh watery then yellowish. (Fries.)

Cortinarius (Dermo.) cinnabar

Smell strong of radishes. Every par
vermilion tinge, flesh paler; pileus ¾-
silky, shining, flesh very thin excep
subdistant, broad, slightly emarginate,
stem 1–2 in. long, 2–3 lines thick, stu
fibrillose; spores elliptic-oblong with
8 × 4 μ.

Cortinarius (Dermocybe) cinnamomeu
p. 370; Cke., Illustr., t. 785B (larger th

In woods.

Distinguished from *C. sanguineus* b
radishy odour and broad gills with ol
margin. Fries states that the stem is

Cortinarius (Dermo.) sanguine

Pileus 1–2 in. across, flesh thin, ex
wavy, innately silky or squamulose,
like that of the stem, similar in
crowded, rather broad, dark blood-re
2 lines thick, equal, along with the
hollow; spores 6–7 × 4 μ.

Cortinarius (*Dermocybe*) *sanguineus*, Fries, Epicr., p. 288; Cke., Hdbk., p. 260; Cke., Illustr., pl. 786.

In woods.

Stem more frequently attenuated than incrassated at the base, giving out a blood-red juice when compressed. Slenderer than *C. cinnabarinus*. Pileus about 1 in. broad, convex, gills sometimes adnate, sometimes emarginate, stem stuffed, then hollow. (Fries.)

Cortinarius (Dermo.) anthracinus. Fr.

Pileus ½–¾ in. across, disc fleshy, remainder thin, convex then expanded, umbonate, silky-fibrillose, almost glabrous, chestnut-colour: flesh similarly coloured: gills adnate, crowded, slightly rounded behind, broad, scarlet, becoming blood-red when bruised; stem about 2 in. long, 2 lines thick, equal, fibrillose, intense blood-red, hollow; spores elliptical, cinnamon with a red tinge, 7 × 5 μ.

Cortinarius (*Dermocybe*) *anthracinus*, Fries, Epicr., p. 288; Cke., Hdbk,, p. 261; Cke., Illustr., 787A.

In woods.

Cortinarius (Dermo.) cinnamomeus. Fr.

Pileus 1–2½ in. across, flesh thin, convexo-campanulate, umbonate, somewhat! cinnamon-colour, silkily squamulose with yellowish innate fibrils, becoming almost glabrous; gills adnate, broad, crowded, shining, yellowish then tawny-yellow; stem 2–4 in. long, equal, yellow, as is also the flesh and the veil, hollow; spores 7–8 × 4–5 μ.

Cortinarius (*Dermocybe*) *cinnamomeus*, Fries, Epicr., p. 288; Cke., Hdbk., p. 261; Cke., Illustr., pl. 777, 778.

In woods.

A very common species, especially in mossy places in pine woods, occurring under many well defined forms, which cannot be separated as species. Essential points common to all. (1) Stem everywhere equal! stuffed then hollow, yellowish, fibrillose from the similarly coloured veil. (2). Pileus thin, flattened and obtusely umbonate, silky with yellowish down, often glabrous when adult, and then bright cinnamon, but the colour is variable. (3) Flesh splitting, yellowish. (4) Gills adnate, crowded, thin, broad, always shining. (5) Spores dark ochraceous, size and colour very variable;

F 2

pileus from ½–3–4 in. across; colour of pileus changeable, depending on the more or less persistence of the down (fundamental colour and veil constant in this species and its allies); gills varying through blood red, reddish cinnamon, tawny-saffron, golden and yellow. (Fries.)

Pileus 1–2½ in. broad, convex or even obtusely conical when young, becoming nearly plane, obtusely umbonate, deep reddish cinnamon, often cracking at the margin, which is thin and sometimes fibrillose, smooth, somewhat fleshy. Flesh yellowish. Gills numerous, adnate, yellow cinnamon, broad, margin often notched. Stem 2–3 in. high, 2–4 lines thick, equal, fibrillose, yellow, solid, hollow in old (?) large plants. (Grev.)

Var. **croceus,** Fries, Monogr., ii. p. 66; Cke., Hdbk., p. 261; Cke., Illustr., pl. 780A.

Smaller than the typical form, pileus innately squamulose, gills less crowded and shining, paler; in swamps the pileus is sometimes fuscous olive, gills and stem olive, or stem fuscous; spores 6 × 3 μ.

Var. **semisanguineus,** Fries, Hym. Eur., p. 370; Cke., Hdbk., p. 261; Cke., Illustr., pl. 779.

Pileus 1½–2½ in. across, tawny, stem 2–3 in. long, yellow, hollow; gills narrow, blood-red or deep orange-brown with a red tinge; spores 7–8 × 4 μ.

Cortinarius (Dermo.) croceo-conus. Fr.

Pileus 1–2 in. across, flesh thin, conical then campanulate, persistently acute, almost glabrous, tawny-cinnamon; gills adnexed, ascending, linear, crowded, cinnamon; stem 2–3 in. long, about 2 lines thick, flexuous, hollow.

Cortinarius (Dermocybe) croceo-conus, Fries, Monogr., ii, p. 67; Cke., Illustr., pl. 780B?

In pine woods, amongst moss, &c.

Gregarious. Stature of *Cortinarius (Tela.) iliopodius,* but allied to *C. croceus,* of which it may be a variety. (Fries.)

The figure given by Cooke does not agree with Fries' description. The pileus is ½–2 in. across, acutely umbonate, yellow with a tawny tinge; stem 1½ in. long, yellow, as is also the flesh, gills yellow then cinnamon.

Gregarious subcaespitose. Equally allied to *C. cinnamo-*

meus as *C. malicorius* is, but differing in an opposite direction. Differs more especially as follows. (1) stem hollow, elongated (3–5 in.) slender 2 (lines), flexuous. (2) Pileus conico-campanulate, persistently acute, for the most part almost glabrous, never squamulose, all one colour, tawny-cinnamon, flesh scarcely $\frac{1}{2}$ line thick. (3) Gills remarkably ascending, linear, crowded, cinnamon. (Fries.)

Cortinarius (Dermo.) uliginosus. Berk.

Pileus $\frac{2}{3}$–1 in. across, campanulato-conical then expanded, strongly umbonate, silky, sometimes streaked, bright red-brown; flesh thin, except at the umbonate disc, yellowish-olive then cinnamon; gills adnate, with a decurrent tooth, 2–3 lines broad, yellow then olive, finally cinnamon; stem 2–4 in. long, about 2 lines thick, flexuous, paler than the pileus, almost equal, imperfectly hollow; spores elliptical, 7×4–$5\ \mu$.

Cortinarius (Dermocybe) uliginosus, Berk., Outl., p. 191; Cke., Hdbk., p. 261; Cke., Illustr., pl. 851.

In boggy woods amongst *Sphagnum*.

Readily distinguished by the long, slender stem, and the bright red-brown, strongly umbonate pileus.

Intermediate between *C. croceus*, of which it is probably a paludine variety, and *C. croceo-conus*; differing from both in colour. (Fries.)

Cortinarius (Dermo.) orellanus. Fr.

Pileus $1\frac{1}{2}$–2 in. across, flesh thickish at the disc, very thin at the margin, convex and obtusely umbonate, villosely scaly or fibrillose, golden-tawny, flesh reddish; gills adnexed, 3 lines broad, rather distant, tawny-cinnamon, at length opaque; stem $1\frac{1}{2}$–2 in. long, 3 lines thick, almost equal, solid, firm, striately fibrillose, tawny; spores obliquely elliptical, 6–7 and 3–4 μ.

Cortinarius (Dermocybe) orellanus, Fries, Epicr., p. 288; Cke., Hdbk., p. 262; Cke., Illustr., pl. 787B.

On the ground in woods.

Closely allied to *Cort. cinnamomeus*, and ranging through the same shades of colour. It also occurs rarely with the pileus golden-tawny and the gills yellow then tawny. Differs from *C. cinnamomeus* more especially in the following

points. (1) stem solid, firmer, striat is also the veil. (2) pileus firmer, gro fibrillose down golden. (3) flesh reddi firmer, and more distant. Sometin *C. cinnabarinus*, from which it differs in in the stem being coloured like the pile (Fries.)

Cortinarius (Dermo.) malicori

Pileus 1–2 in. across, flesh thin, conv fibrillosely velvety, golden-tawny; fl then greenish-olive; gills rounded behi golden-tawny, margin at length floccul about 2 in. long, ½ in. thick, fibrillose, the cortina, golden, hollow.

Cortinarius (Dermocybe) malicorius, Fries, Hymn. Eur., p. 371.

In pine woods.

Elegant, allied to *C. cinnamomeus*; ta mental colour of pileus tawny, appearin disc: beautiful golden, especially near down, stem ½ in. thick, at length fus yellow, then olive. (Fries.)

Very similar to *C. cinnamomeus*, differs always hollow; thicker (½ in.) short (2 then olive brown. (2) pileus truly almost plane, obtuse, disc dark brown sh margin golden. (3) flesh yellow then (4) gills rounded behind, much more c golden-tawny, edge becoming flocco (Fries.)

Cortinarius (Dermo.) infucatus

Pileus 1½–2½ in. across, convex, obtuse dry, bright yellow; fleshy at the disc, branaceous; gills adnate, slightly round narrow, tawny, then cinnamon-colour; ½–¾ in. thick at the clavate base, atten lose, white tinged yellowish, solid; spore

Cortinarius (Dermo.) infucatus, Fries, Cke., Hdbk., p. 262; Cke., Illustr., pl. 7

On the ground in woods.

In colour the present species approaches *C. percomus* and *C. callisteus*, but is readily known from either by the above characters. Flesh whitish.

**** *Becoming olivaceous. Veil dingy, pallid, or fuscous. Pileus not torn into scales.*

* Cortinarius (Dermo.) cotoneus. Fr.

Pileus about 3 in. across, flesh thin, soft, pale olive, campanulate then expanded, obtuse, rather wavy, everywhere densely covered with a clear olive down or tomentum, fragile, when old; gills adnate, separating from the stem, rather crowded, 2–3 lines *broad, olive then cinnamon*, edge same colour and quite entire; stem 3 in. long, ½ in. thick, soft, bulbous, somewhat fibrillose, pale olive, solid; veil persistent, forming a brown interwoven zone near the apex of the stem; spores elliptical, granular, 10–11 × 8 μ.

Cortinarius (Dermocybe) cotoneus, Fries, Epicr., p. 289; Cke., Hdbk., p. 262; Cke., Illustr., pl. 749.

In woods.

Very showy; soft to the touch, olivaceous outside and inside; opaque, pileus lax, 3 in. broad, covered with a pure *olive-coloured*, subpersistent down. Stem 3 in. long. (Fries.)

Cortinarius (Dermo.) subnotatus. Fr.

Pileus 3–4 in. across, flesh thin, campanulate then expanded, at first clothed with hoary, floccose, superficial squamules, soon glabrous, olive then fuscous; gills adnate, ventricose, broad, rather distant, yellowish then olivaceous-cinnamon; stem 3–4 in. long, ½ in. thick, conical, squamulose with the yellowish fibrils of the veil, smooth and shining at the apex, stuffed and spongy inside; spores elliptical, granular, 10 × 5 μ.

Cortinarius (Dermocybe) subnotatus, Fries, Epicr., p. 290; Cke., Hdbk., p. 262; Cke., Illustr., pl. 832?

In beech woods, &c.

A tall species; stem stout, fragile, 3–4 in. long, glabrous when adult. Pileus at first conical, acute, gibbous, pale, 4 in. broad; peculiar in becoming quite plane, glabrous, and dark fuscous when adult and dry. Gills 3–5 lines broad, connected by veins, rather thick. (Fries.)

Cooke's figure differs in having the stem distinctly hollow from the first, flesh of pileus and stem hollow, and in possessing a strong smell.

Very showy, tall but slender, inodorous. In the young state the stem is stuffed, conico-attenuated, 3–4 in. long, often curved and wavy, fibrillose, sometimes squamulose, becoming pale, apex naked and silvery-shining; veil and fibrillae of stem yellowish; pileus with the exception of the disc, almost membranaceous, at first conical or parabolic (appearing somewhat ovate from the incurved pileus), at first covered with silky fibrils, yellowish-olive, darker when dry; gills adnate rather distant, and broad; bright pale-ochraceous. The adult fungus presents a very different appearance, and might readily be mistaken for a distinct species. Stem spongy, at length hollow, 4 in. long, equally attenuated from the base, veil not conspicuous; pileus expanded, 4 in. across, glabrous, dark brown; gills 3–5 lines broad, cinnamon-olive. (Fries.)

Cortinarius (Dermo.) raphanoides. Fr.

Pileus 1–2 in. across, campanulate then expanded, obtusely umbonate, often undulated, silky-fibrillose, brownish-olive, discoloured when mature, becoming tawny and glabrous; flesh pallid, almost the colour of the pileus; gills adnate, slightly ventricose, scarcely crowded, somewhat olive, at length cinnamon or subferruginous, edge paler; stem stuffed 2–3 in. long, equally attenuated upwards, rarely equal, fibrillose, opaque, becoming pallid; veil filamentous, pale olive, spores somewhat pyriform, 8 × 5 μ.

Cortinarius (*Dermocybe*) *raphanoides*, Fries, Epicr., p. 290; Cke., Hdbk., p. 263; Cke., Illustr., pl. 833A.

In birch, beech, and beech woods, &c.

Smell strong of radishes. Taste acrid. Stem sometimes elongated and twisted. (Fries.)

Pileus 2 in. broad, when moist brownish-olive, when dry yellowish-olive, convex at first, then expanded. Gills broad, darker, adnate or emarginate. Stem 3 in. high, 4 lines thick, subascending, fibrillose, villous at the base. (Fries.)

Cortinarius (Dermo.) valgus. Fr.

Pileus about 3 in. across, very thin, disc fleshy, fragile, at first convex, even, and pale olivaceous, then expanded,

subumbonate, and yellowish-brown, becoming pale, somewhat brick-red when dry, glabrous; the very thin flesh similar in colour; gills adnate, inclined to separate from the stem, rather distant, 2–3 lines broad, yellowish then cinnamon; stem 5–6 in. long, base bulbous, ½ in. and more thick, attenuated upwards, somewhat twisted, not fibrillose, pallid, shining, the slightly striate apex tinged violet, imperfectly hollow.

Cortinarius (Dermocybe) valgus, Fries, Epicr., p. 290; Cke., Hdbk., p. 263; Cke., Illustr., pl. 750?

Amongst moss in pine woods, &c. Intermediate between *C. subnotatus* and *C. sublanatus*; differing from both in the smooth, not fibrillose stem. Smell none.

The form (pl. 750) referred to this species, with some doubt, differs from the type in several particulars, and is perhaps a distinct variety. (Cooke.)

Cooke's figures quoted above, are as follows:—Pileus about 3 in. across, convex then expanded, subgibbous, lurid pale yellowish-olive, more or less fibrillose; flesh thick, whitish, stem about 3 in. long, 1 in. thick at the clavate base, attenuated upwards, coloured like the pileus or a little paler, trace of veil in the form of an indistinct zone, solid; gills adnate, or very slight indication of a sinus behind, 2 lines broad, deep cinnamon at maturity.

In woods.

Cortinarius (Dermo.) venetus. Fr.

Pileus 1½–2 in. across, fleshy, hemispherical, obtuse, regular, covered with a persistent, erect, minutely velvety tomentum, green when young, then greenish-yellow, becoming more of a yellow colour when dry, not hygrophanous, flesh pale yellowish; gills adnate, connected by veins, somewhat distant, very broad, darker olive than the pileus; stem 2–3 in. long, 3–4 lines thick, equal, firm, convex, colour of the pileus or a little paler, greenish-yellow, remarkably silky-fibrillose, stuffed or hollow above; ring fibrillose, green; spores $10 \times 5\ \mu$.

Cortinarius (Dermocybe) venetus, Fries, Epicr., p. 291; Cke., Illustr., pl. 833B; Cke., Hdbk., p. 263.

In woods.

Gregarious; very distinct. Base of stem often downy

and yellow. The yellow down of the pileus separates it from *C. depexus*; the colour is sea-green or clear yellow-green, flesh greenish-yellow. Pileus obtusely umbonate. (Fries.)

Subgen. INOLOMA.

ANALYSIS OF THE SPECIES.

* Gills white or pallid at first.

** Gills, veil, and stem becoming violet.

*** Gills and veil cinnamon, red, or ochraceous.

**** Gills and veil dusky, fuscous or olivaceous.

Subgen. INOLOMA.

* *Gills at first white or pallid.*

Cortinarius (Ino.) argentatus. Krombh.

Pileus 3–4 in. across, fleshy, convexo-plane, at length broadly gibbous, silky then almost glabrous, silvery-grey, shining, pale whitish-brown near the margin, at first lilac and silky; flesh whitish; gills emarginate, crowded, serrulate, 3 lines broad, pallid then watery cinnamon; stem 4 in. long, ½ in. and more thick, attenuated from the scarcely bulbous base, glabrous, silvery-white, base at length yellowish, solid, white within; veil fibrillose, fugacious, pallid, adhering to the margin of the pileus; spores 8 × 5 μ.

Cortinarius argentatus, Krombholtz, Icon., t. ii. f. 27; Cke., Hdbk., p. 250; Cke., Illustr., pl. 745.

In woods.

Large, stout, inodorous, becoming pale; pileus sometimes flexuous. Smell rather strong, but not foetid.

Var. **pinetorum,** Fries, Monogr., i. p. 46; Cke., Illustr., pl. 746.

Smaller; stem 2 in. long, pileus 2 in. broad, at first lilac and silky; odour weak.

Cortinarius (Ino.) opimus. Fr.

Pileus 3–4 in. across, flesh very thick and very hard, **white**; **convex then plane, deformed, wavy, margin broken, absolutely**

dry, everywhere covered with short, ochraceous down, even, thin, truly rimoso-rivulose; gills emarginate, much narrower than the thickness of the flesh of the pileus, slightly crowded, whitish then tan-colour, crisped owing to the incurved pileus; stem very short, about 1 in. long, nearly the same thickness, solid, very compact, base rooting, whitish.

Cortinarius (*Inoloma*) *opimus*, Fries, Monogr., ii. p. 44; Fries, Hym. Eur., p. 359.

On the ground.

Solitary. Distinguished by the very short, thick stem, and the very thick, hard flesh of the pileus.

Var. **fulvobrunneus**, Fries, Monogr., ii. p. 45.

Stem 1½ in. long, 1 in. thick, attenuated below, fibrillosely striate; pileus undulated, thinner (margin thin), glabrous, but rimoso-rivulose, tawny-brown; gills very broad.

The present variety has not, so far as I am aware, been observed in Britain.

Cortinarius (**Ino.**) **turgidus.** Fr.

Pileus 2–3 in. across, very fleshy and compact, convex then flattened, very obtuse, hoary, rarely sprinkled with shining atoms, silky near the margin when young, everywhere glabrous and silvery shining when adult; flesh hard, white, not changing colour; gills emarginate, crowded, 2 lines broad, quite entire, whitish then tan-colour; stem solid, stout, bulbous, base much swollen, spongy within, rigid and cartilaginous externally, elastic, silvery white, glabrous; but under a lens longitudinally fibrillose and cracked in a reticulate manner, surface often undulated; veil white, fibrillose, fugacious.

Cortinarius (*Inoloma*) *turgidus*, Fr., Epicr., p. 278; Fries, Hym. Eur., p. 360.

In woods.

Allied to *C. argentatus*, but known by the very obtuse pileus and the quite entire margin of the gills.

** *Gills, stem, and veil becoming violet.*

Continarius (**Ino.**) **violaceus.** Linn.

Pileus truly fleshy, 3–6 in. across, convex then expanded, regular, obtuse, everywhere covered with persistent down,

and for the most part cracked into sq
sometimes purple-violet, margin at firs
deeper-coloured than the pileus; gill
firm, distant, connected by veins, broa
the pileus, dark, almost blackish-vi
colour from the spores, but violet when
stem solid, stout, remarkably bulbous,
thick, spongy, soft, at first tomentose,
violet, inside greyish-violet; veil wool
ginous from the falling spores; spores 1

Cortinarius (Inoloma) violaceus, Linn.,
Cke., Illustr., pl. 770.

In woods.

Easily distinguished from allied fo
violet both outside and inside, the villo
and distant gills. (Fries.)

Large, handsome. Pileus 3–6 in. bro
Gills, when young deep violet, almost
high, when young subtomentose. (Fri

If attention be paid to the sporules
there will be no danger of confounding
varieties of *A. personatus*. (Berk.)

Cortinarius (Ino.) cyanites. F

Pileus 3–5 in. across, fleshy, obtu
smooth, pale sky-blue; gills adnexed, r
what crowded, at first clear steel-blue
½–¾ in. thick at the apex, bulbous, sn
taining a blood-red juice; spores ellipti

Cortinarius (Inoloma) cyanites, Fries,
Hdbk., p. 252.

In woods.

The stem gives out a blood-red jui
Pileus at length glabrous, livid-brow
pale sky-blue, then dingy white, and of

Var. **major.** Fries, Hym. Eur., p. 3
fleshy, tardily becoming reddish; gill
bluish-grey. (Fries.)

Cortinarius (Ino.) muricinus.

Pileus 3–4 in. across, fleshy, convex tl
becoming smooth, violaceous then wi

margin whitish-fibrillose; gills emarginate, somewhat crowded, purplish-violet, broad; stem about 3 in. long, bulbous, attenuated upwards, about ⅝ in. thick at the apex, villose, purplish-violet, flesh without juice; veil white at first; spores 8–9 × 4–5 μ.

Cortinarius (Inoloma) muricinus, Fries, Epicr., p. 279; Cke., Hdbk., p. 252; Cke., Illustr., pl. 815.

In larch-woods, &c.

Stem stout, somewhat woolly, pileus thick, spongy, 3–4 in. broad, gills ½ in. broad, at length reddish-liver colour, smell peculiar. Flesh juiceless, sky-blue then whitish. (Fries.)

Cortinarius (Ino.) alboviolaceus. Fr. (figs. 7, 8, 12, p. 16.)

Pileus 2–3 in. across, convex, broadly umbonate or gibbous, dry, prettily innately silky and even, the fibrils longitudinally adpressed, whitish-violet; flesh watery, bright bluish-white; gills adnate, scarcely emarginate, 2–3 lines broad, not crowded, somewhat serrulate at the margin, colour a peculiar greyish-violet, at length greyish-cinnamon; stem 2 in. long, ½–1 in. thick, solid, firm, clavately bulbous, or conically attenuated, whitish-violet outside and inside, with white down, fibrillose above from the veil, and with a white ring-like zone at the middle of the stem; spores 12 × 5–6 μ.

Cortinarius (Inoloma) alboviolaceus, Fries, Epicr., p. 280; Cke., Hdbk., p. 253; Cke., Illustr., pl. 747.

In beech-woods, &c., amongst fallen leaves.

Smell none, taste not remarkable; stem somewhat conical and often peronately ringed. Flesh juicy, bluish-white.

Cortinarius (Ino.) malachius. Fr.

Pileus about 2 in. across, truly and equally fleshy, commonly compact, convex then expanded, obtuse or slightly gibbous, pale lilac then rusty brown, pale tan when dry, hoary from minute fasciculate down, or towards the margin silky; flesh whitish; gills emarginate, crowded, purple, becoming pale, at length watery ferruginous; stem bulbous (when growing on rotten pine leaves very ventricose, or sometimes equal), always stout, 3–4 in. and more long, often 1 in. thick, frequently deformed, bluish-lilac then whitish,

solid but spongy within, soft, pallid; veil at first somewhat peronate but commonly the stem is naked, apex delicately cortinated, fibrils becoming cinnamon-tinted from the spores, a white, membranaceous ring is rarely present; spores 10–12 × 6–7 μ.

Cortinarius (Inoloma) malachius, Fries, Epicr., p. 280; Cke., Hdbk., p. 253; Cke., Illustr., pl. 756.

In fir woods.

Flesh of stem soft, pileus equally flesh, hoary with fasciculate down, at first similar to *Cort. armeniacus*, but at length discoloured and hygrophanous. Inodorous. A perfect, membranaceous ring is sometimes present. (Fries.)

Flesh of the stem soft, often contorted and ventricose, 3–4 in. long and 1 in. thick. Pileus 2 in. broad, lilac, then tawny ferruginous, or when dry of a brick-red, becoming pale, hoary with a whitish pubescence, or silky at the margin. Spores 10–12 × 6–7 μ. (Cooke.)

Cortinarius (Ino.) camphoratus. Fr.

Pileus 2–3 in. across, fleshy, convex then expanded, obtuse, at first silky and lilac-colour, then almost glabrous and whitish or yellowish, not hygrophanous; flesh blue; gills at first arcuate, commonly adnato-decurrent, but sometimes emarginate, thin, crowded, at first deep sky-blue then purplish; stem 3–5 in. long, soft, bulbous or obclavate, ½–1 in. thick, woolly-peronate when young, violet inside and base white, solid; cortina fibrillose, blue, at length cinnamon from the spores; spores ochraceous-cinnamon, elliptical, 9 × 6 μ.

Cortinarius (Inoloma) camphoratus, Fries, Monogr., ii. p. 50; Cke., Hdbk., p. 253; Cke., Illustr., pl. 771.

In pine woods, &c.

This, and the two following (*C. hircinus* and *C. traganus*), are distinguished from all others by their foetid and highly-penetrating odour. The smell of the present species is altogether peculiar, and quite different from the goat-like smell of *C. hircinus*. (Fries.)

Cortinarius (Ino.) hircinus. Fr.

Pileus about 2 in. across, fleshy, obtusely gibbous, silky, with adpressed, violet fibrils, becoming pale, disc almost

glabrous, becoming ferruginous; gills emarginate, rather distant, broad, margin entire, violet then cinnamon; stem bulbous, juiceless, cortinate, violet then pallid, base and inside yellowish.

Cortinarius (*Inoloma*) *hircinus*, Fries, Hym. Eur., p. 362; Cke., Hdbk., p. 253.

In fir woods. Exceedingly foetid.

Exactly intermediate between *C. camphoratus* and *C. traganus*. External colours and gills of the first; internally and with the very foetid odour of the second.

Differs from *C. camphoratus*: (1) goat-like odour; (2) dingy flesh becoming yellowish; (3) base of stem yellow inside, disc of pileus becoming ferruginous; (4) the rather distant gills being sky-blue then cinnamon. Differs from *C. traganus* (1) gills at first violet, not ochraceous; (2) flesh not ochraceous-saffron; (3) gills thinner, quite entire. (Fries.)

* * * *Gills and veil cinnamon, red, or ochre.*

Cortinarius (Ino.) traganus. Fr.

Pileus, about 3 in. across, very fleshy, convex then expanded, obtuse, dry, at first silky, even, purple-lilac, soon becoming pale, at length almost glabrous and yellowish, same colour inside; gills emarginate, broad, distant, distinct, firm, saffron-ochraceous at length cinnamon, margin slightly crenate; stem 3–5 in. long, ½–1 in. thick, base truly villose, very bulbous, 1–2 in. thick, at first silky then fibrillose, violet then whitish, inside deep saffron ochraceous; veil continuous with the silky covering of the pileus, pale violet, then cinnamon from the pip-shaped spores, 9–10 × 6 μ.

Cortinarius (*Inoloma*) *traganus*, Fries, Cke., Hdbk., p. 253; Cke., Illustr., pl. 757.

Agaricus traganus, Schaeffer, t. 56.

In pine woods, &c.

Readily distinguished by the very foetid odour, and by the thick, distant gills being at first saffron-ochraceous. (Fries.)

Var. **finitimus**, Weinm., p. 155.

Pileus silky, at length smooth, lilac, as is also the stem, which is yellowish and mottled within, but not saffron-

colour nor brown. Smell not at all that of the typical form, but pleasant though peculiar, resembling that of gum just beginning to ferment.

This peculiar form is the more interesting, as it has not been met with in Sweden. (B. & Br.)

Cortinarius (Ino.) suillus. Fr.

Pileus 3–4 in. across, flesh thick at the disc, elsewhere thin, convex, obtuse, dingy and pallid brick-red, slightly silky towards the margin, sometimes floccosely squamulose; gills adnate, up to ½ in. broad, rather distant, cinnamon, opaque; stem stout, spongy, 3–4 in. long, ½–1 in. thick, clavately-bulbous, attenuated upwards, dingy, pallid, darker when bruised; apex with a transient violet shade, silky, even; remainder fibrillose, and sometimes white and woolly below.

Cortinarius (Inoloma) suillus, Fries, Monogr., ii. p. 51; Fries, Hym. Eur., p. 362.

In pine woods.

Gills fragile, connected by veins at the base. (Fries.)

Cortinarius (Ino.) tophaceus. Fr.

Pileus 3–4 in. across, fleshy, convex then expanded, obtuse, tawny-ochraceous, villosely scaly, flesh white; gills emarginate, distant, tawny-cinnamon, 3 lines broad; stem 2–3 in. long, swollen at the base and more than 1 in. thick, thinner upwards, villosely scaly, yellowish as is also the veil; spores elliptic-fusiform, 10 × 5.

Cortinarius (Inoloma) tophaceus, Fries, Epicr., p. 281; Cke., Hdbk., p. 254; Cke., Illustr., pl. 772.

In beech woods, &c.

Subcaespitose. Solitary specimens are larger and resemble *C. violaceus* in habit, but differ in being entirely ochraceous; when caespitose the specimens are more slender, stem often twisted. Smell not remarkable. (Fries.)

Differs from *C. redemitus* in the expanded very obtuse pileus. Cooke says the whole fungus is golden yellow.

Cortinarius (Ino.) redemitus. Cooke.

Pileus 2–3 in. across, flesh thin, convex then expanded, at length broadly gibbous, golden-yellow, deepest and rather tawny at the disc, variegated with darker, adpressed fibril-

lose squamules; gills emarginate, rather distant, 3 lines broad, tawny-cinnamon; stem about 2 in. long, up to ¾ in. across at the thickened base, fibrillosely striate, yellowish; flesh like that of the pileus whitish; veil whitish, forming a cinnamon, indistinct zone on the stem; spores elliptic-fusiform, 10 × 5 μ.

Cortinarius (Inoloma) redemitus, Cke., Hdbk., p. 254; Cke., Illustr., pl. 772.

Cortinarius (Inoloma) tophaceus, var. *redemitus*, Fries, Hym. Eur., p. 363.

In woods.

Distinguished from *C. tophaceus* by the stem not being bulbous, but only slightly thickened at the base, and in not being villosely scaly.

Cortinarius (Ino.) callisteus. Fr.

Pileus about 2 in. across, fleshy, but thin at first, especially *at the incurved margin, convex then expanded, scarcely* umbonate, almost glabrous, silky towards the margin, commonly broken up into minute, innate squamules, tawny-yellow, not hygrophanous nor becoming pale; flesh yellowish-*white; gills broadly adnate, grown to each other behind* and to the stem with down, plane, rather distant, distinct, 4 lines broad, thin, quite entire, tawny-yellow; stem 3–5 in. long, ½ in thick, more at the base, clavato-bulbous, equally attenuated upwards, distinctly fibrillose striate, rhubarb-colour without and within, firm, soft and spongy only at the base, solid.

Cortinarius (Inoloma) callisteus, Fries, Monogr., ii. p. 53; Cke., Hdbk., p. 254; Cke., Illustr., pls. 774 and 864.

In pine woods. Smell none.

Inodorous. Stem 3–4 in. long, attenuated from the soft clavate base, apex 3–4 lines thick, entirely fleshy, rhubarb-colour outside and inside. Pileus equally fleshy but thin, not hygrophanous, shining, 2 in. broad, margin arched and incurved, appendiculate at first with the fibrillose, similarly coloured veil. Gills at first rather crowded, then somewhat distant, oblong, plane, connected together at the base and to the stem by a flocculose substance. (Fries.)

Pileus 4 in. broad, fleshy, the margin thin, deep tawny inclining to ferruginous; at first convex, flatly hemispherical

or subcampanulate, very obtuse, at length expanded plano-convex clothed with very minute reflexed scales; flesh whitish partaking very slightly of the colour of the pileus; margin at first subinvolute. Gills ⅜ in. broad, brittle, undulate, nearly horizontal, adnate, soon starting from the stem and connected with it by a few fibres, very minutely emarginate, pale tawny clouded with the sporules. Stem 4 in. high, nearly 1 thick in the centre, 1¼ at the base, bulbous, fibrillose from the remains of the fugaceous veil which forms in the very young plant a slight extremely evanescent ring which is coloured by the sporules; solid, tawny like the pileus. At the base are a few strong roots. There is not the slightest tinge of purple or violet in any stage of growth. (Berk.)

Cortinarius (Ino.) Bulliardi. Fr.

Pileus 1–3 in. across, campanulate then convex, rather gibbous, even or slightly squamulose, rufescent; gills adnexed with a decurrent tooth, about 3 lines broad, purplish then ferruginous, edge crenulate, whitish; stem 2–3 in. long, ½ in. thick, bulbous, firm, with vermilion fibrils at the base, apex whitish, veil fugacious, whitish; spores 8–10 × 6 μ.

Cortinarius (Inoloma) Bulliardi, Fries, Epicr., p. 282; Cke., Hdbk., p. 255; Cke., Illustr., pl. 758.

In woods.

Small but robust, strong scented. Pileus 2 in. broad, commonly glabrous, but sometimes entirely fibrillose. Flesh white, rufescent towards the base of the stem. There is a form approaching *C. muricinus* and *C. caninus*, having the stem violet above, reddish below, pileus rufous-violet, flesh bluish near the gills, gills crowded. (Fries.)

Readily known by the vermilion bulb.

Cortinarius (Ino.) vinosus. Cooke.

Pileus 2–3 in. across, semiglobose then expanded, at length flattened, vinous red, smooth, even, shining; gills adnexed, ventricose, scarcely crowded, about 2 lines broad, ferruginous cinnamon; stem 2–3 in. long, ½ in thick, thickened abruptly into a marginate, bulbous, reddish base, cylindrical, upper part pale violet, reddish below; veil reddish; spores almond-shaped, granular, 16–18 × 8 μ.

Cortinarius (Inoloma) vinosus, Cke., Hdbk., p. 255; Cke., Illustr., pl. 759.

Under trees.

Distinguished by the vinous or purplish-red pileus and the distinctly marginate bulb of the stem.

Cortinarius (Ino.) bolaris. Fr.

Pileus 1–2 in. across, rather fleshy, convex then plane, rather umbonate, margin sometimes upturned and splitting or flexuous, reddish-yellow, becoming pale, sprinkled with small, innate, pilose, adpressed, saffron-red squamules; gills very slightly decurrent, crowded, soft, watery cinnamon; stem 2–3 in. long, almost even, squamose, coloured like the pileus, stuffed then hollow, often flexuous; spores elliptical, 10 × 5 μ.

Cortinarius (Inoloma) bolaris, Fries, Epicr., p. 282; Cke., Illustr., pl. 760; Cke., Hdbk., p. 255.

In beech woods, &c. Sometimes subcaespitose.

Pileus 1–3 in. across, fleshy, convex then plane, obsoletely umbonate, yellowish-red or becoming pallid, glabrous, or spotted with adpressed red scales (similar to the stem) rarely all red from the scales being contiguous; flesh very firm, white; *gills commonly decurrent, arcuate, sometimes adnate*, or even emarginate, crowded, at first dilute then dusky cinnamon; stem about 3 in. long, 4 lines thick, attenuated from the base, whitish-fibrillose above, becoming glabrous and pallid; tomentose below, tomentum whitish or reddish, brownish within, solid, fibrous. (Fries.)

**** *Gills or veil dark, fuscous, or olive.*

Cortinarius (Ino.) pholideus. Fr.

Pileus 2–4 in. across, convex, expanded, obtusely umbonate, flesh thin except at the centre, brownish, when dry fawn-coloured and densely covered with minute, erect, brown squamules; gills rather distant, broad, emarginate, when young lilac then dingy cinnamon; stem 3–4 in long, ⅓–¾ in. thick, thinner above, silky-fibrous, shining, with numerous dark brown transverse squamules below the ring, smooth above and tinged lilac; spores broadly elliptical, obliquely apiculate, 5 × 3·5–4 μ.

Cortinarius (Inoloma) pholideus, Fries, Hym. Eur., p. 364; Cke., Illustr., t. 761 (pileus too dark brown).

In woods.

Easily known by the squarrose stem and pileus, and the dingy cinnamon-coloured gills. The pileus has sometimes an olive tinge.

Cortinarius (Ino.) sublanatus. Fr.

Pileus 3–4 in. across, flesh thin, whitish; campanulate then expanded, umbonate, fawn-colour then tan-colour with a fuscous tinge, at length rusty, ornamented with scattered, silky, innate, brownish squamules; gills adnate, broadest behind, scarcely crowded, 3 lines broad; yellowish-olive, at length cinnamon; stem solid, 3 in. long, conically elongated, or clavately bulbous, base up to 1 in. across, tomentosely squamose with the brown fibrillose veil up to the middle, naked above and slightly tinged violet; spores almond-shaped, granular, 14–16 × 8–9 μ. Odour of radishes.

Cortinarius (Inoloma) sublanatus. Fries, Monogr., ii. p. 55; Cke., Hdbk., p. 256; Cke., Illustr., p. 762.

Agaricus sublanatus, Sow., t. 224.

In fir woods, &c.

Intermediate between *C. pholideus* and *C. valgus*.

Smell like that of radishes. Pileus 3 in. broad, at length broadly and obtusely umbonate, colour variable; yellowish brown; scales brownish or white, sometimes silky adpressed. Gills adnate or emarginate. Stem 3 in. high, yellowish pallid, sometimes violet above. (Fries.)

Cortinarius (Ino.) phrygianus. Fr.

Pileus 2–3 in. across, fleshy, convex, obtuse, honey-colour, densely covered with simple, black hispid fibrils; gills rounded behind, rather crowded, dingy yellow; stem somewhat bulbous, soft, paler than the pileus, whitish when dry, with black filaments forming a lax network.

Cortinarius (Inoloma) phrygianus, Fries, Epicr., p. 283; Cke., Hdbk., p. 256.

In damp beech woods, &c.

Habit almost that of *Armillaria mellea*. Smell like radishes.

Cortinarius (Ino.) arenatus. Fr.

Pileus 2–3 in. across, convex, gibbous at first, light red

then pale brown, granulated with floccose scales; flesh thin except at the disc; gills emarginate, ventricose, somewhat crowded, yellowish cinnamon; stem about 3 in. long, ¼ in. or more thick at the apex, incrassated downwards, clad with brown scales up to above the middle, apex smooth, paler than the rest; spores obliquely elliptical, 7 × 5 μ.

Agaricus (Inoloma) arenatus, Fries, Epicr., p. 283; Cke., Hdbk., p. 256; Cke., Illustr., pl. 763.

In woods.

Closely allied to *C. phrygianus*, but in the latter the squamules of the pileus and stem are blackish, and the smell is strong, resembling radishes. Like the last-named, the present species has an olive tinge when young. Difficult to distinguish from a discoloured form of *C. pholideus*, but in the present species the gills are never violet.

Cortinarius (Ino.) penicillatus. Fr.

Pileus 1–1½ in. across, convex, obtusely umbonate, dry, densely flocceso-squamose, rusty-brown, the innate scales darker, tawny when dry; flesh very thin, same colour; gills separating from the stem, plane, rather crowded, 3 lines broad, obscure brown; stem 2–3 in. long, 2–3 lines thick, equal, fragile, furnished with concentric, rusty-brown, adpressed squamules almost up to the apex, paler than the pileus, palest and adpressedly silky at the very apex, stuffed; spores pip-shaped, minutely granular, 8–9 × 5 μ.

Cortinarius (Inoloma) penicillatus, Fries, Monogr., ii. p. 56; Cke., Hdbk., p. 256; Cke., Illustr., pl. 764.

In pine woods, &c.

Placed here on account of the innately squamulose pileus and affinity with preceding species, but the size is quite that of the *Dermocybeæ*. (Fries.)

Subgen. MYXACIUM.

ANALYSIS OF THE SPECIES.

† Collinitі.

Stem floccosely sheathed, flocci at first covered with gluten.

•

†† Delibuti.

Veil entirely viscid, hence the stem is not floccosely sheathed, but varnished when dry.

* Gills whitish, then pale-tan.

** Gills at first violet, blue, or reddish.

*** Gills at first ochraceous or cinnamon.

COLLINITI.

Cortinarius (Myx.) arvinaceus. Fr.

Pileus 3–4 in. across, fleshy, soft, convex soon expanded, at length reflexed and undulate, even, glabrous, viscid, shining when dry, golden-tawny or reddish-tan, when vigorous the margin is slightly striate; gills adnato-decurrent, very broad, $\frac{1}{2}$–$\frac{3}{4}$ in., smooth at the sides, rather distant, margin crenulate, at first straw-colour, then clear ochraceous: stem solid, 5–8 in. high, $\frac{1}{2}$ in. thick, equal, silky-viscid, never broken up into squamules, white; veil fibrillose and fugacious: spores bright ochraceous.

Cortinarius (*Myxacium*) *arvinaceus*, Fries, Epicr., p. 274; Cke., Hdbk., p. 248; Cke., Illustr., pl. 737.

In beech woods, &c.

Stem a span high or sometimes shorter, $\frac{1}{2}$ in. thick, pileus 3–4 in. broad, golden-tawny, viscid, not scaly nor glutinous, obtuse; gills up to $\frac{3}{4}$ in. broad, crenulate, rather distant; veil not forming a ring. (Fries.)

Cortinarius (Myx.) collinitus. Fr.

Pileus 3–5 in. across, fleshy except the margin, convex with the margin incurved, then expanded, obtuse, even, glutinous, shining, tawny-orange; gills adnate, 3–6 lines broad, tan-colour or greyish then cinnamon; stem 3–5 in. long, up to 1 in. thick, firm, cylindrical, transversely scaly from the breaking up of the floccose, glutinous veil; spores $12 \times 6\ \mu$.

Cortinarius (*Myxacium*) *collinitus*, Fries, Epicr., p. 274; Cke., Hdbk., p. 248; Cke., Illustr., pl. 738.

ıeather, &c.
ıish, sometimes white, soft, evidently
eus golden-tawny, with a persistent,
ten, shining when dry. There are
ous wavy, stem brownish; (c) small,
' straw-colour, stem with concentric
ıite; (d) very small, pileus bay-brown,
g. (Fries.)
es, Hym. Eur., p. 355; Cke., Hdbk.,
t. 739.
silky, usually white, sometimes tinged
g, ½–1 in. thick; pileus 2–4 in. across;
uginous, 3–6 lines broad.

ꝛx.) mucifluus. Fr.
ıs, rather fleshy, campanulate then ex-
gin striate, yellowish, covered with
ıeus; stem 2–3 in. long, 4 lines thick
g slightly thinner downwards, soft,
ious floccosely scaly veil, smooth and
; gills adnate, distinct, pale tan-colour
; spores granular, 12 × 7 μ.
um) mucifluus, Fries, Epicr., p. 274;
Cke., Illustr., pl. 740.

ꝛ, heathy pine-woods. Allied to C.
it was for a long time considered
ore especially as follows: (1) stem
ownwards, white; (2) pileus *thinner*,
ꝑanded, at length reflexed and wavy,
margin striate; (3) colour of pileus
and opaque when dry; (4) gluten of
ne, diffluent, not forming a thick, per-
e; (5) odour sweet. Gills tan-colour
e is no trace of violet in any part of

yx.) elatior. Fr.
ss, disc rather fleshy, cylindrical or
ate, at length expanded and somewhat
: the stem obtuse and even, the rest up

to the margin almost membranaceous and longitudinally plicato-rugose, fragile, rather viscid, usually livid-yellow when moist, dingy ochraceous when dry; gills adnate, at first about 3 lines broad, becoming much broader, up to 1 in., rather distant, connected by veins, rugose at the sides, always dark, brownish-cinnamon; stem solid, soft, 5–7 in. long, ½ in. and more thick, commonly attenuate at both ends, especially the base, longitudinally fibrous, with broken-up, whitish, viscid scales, rarely tinged violet; veil viscid, fugacious; spores 12 × 6 μ.

Cortinarius (Myxacium) elatior, Fries, Monogr., ii. p. 37; Cke., Hdbk., p. 249; Cke, Illustr., pls. 741 and 742.

In woods, especially pine.

Large, remarkable for the thin flesh of the pileus: colour livid bay, ochraceous, or tan, but sometimes also blackish-bay, brownish-violet, greyish with the margin violet, whitish, &c. Gills always dark, also violet-brown; stem white, sometimes violaceous, concentrically squamulose and silky. (Fries.)

Cortinarius (Myx.) grallipes. Fr.

Pileus about 3 in. across, almost membranaceous except at the disc, umbo prominent often acute, campanulate then expanded, hygrophanus, even, rather viscid (not glutinous), ferruginous when moist, ochraceous-tan when dry, opaque; gills entirely adnate, with a decurrent tooth, plane, attenuated in front, crowded, sides smooth (not veined), tan-colour then ferruginous; stem 4–6 in. long, 2–3 lines thick, everywhere equal but flexuous, tough, fibroso-striate, viscid, tawny-yellow, ochraceous when dry, apex naked, stuffed, then hollow.

Cortinarius (Myxacium) grallipes, Fries, Epicr., p. 375; Cke., Hdbk., p. 249; Cke., Illustr., pl. 734.

In mixed woods.

With the habit of *Cort. hinnuleus*, but viscid, not lacerated. Gills up to ½ in., broad behind. (Fries.)

Cortinarius (Myx,) livido-ochraceus. Berk.

Pileus 1–1½ in. across, almost membranaceous, convex then plane, viscid, margin not striate, ochraceous; gills rounded behind and slightly adnexed, broad in front, pale then cinnamon; stem about 1 in. long, 3–4 lines thick, attenuated at

both ends, whitish, striate above the evanescent veil, stuffed with cottony fibres; spores 8–10 × 5–7, μ, rough.

Cortinarius (Myxacium) livido-ochraceous, Berk., Outl., p. 187; Cke., Hdbk., p. 250; Cke., Illustr., pl. 767.

In woods.

Small, pileus about 1 in. broad, spores 8–10 × 5–7 μ, rough in the original specimens in Berkeley's Herbarium. The large size given in some books for the spores of this species must be an error. (Cooke.)

Pileus 1 in. broad, quite smooth, shining, covered with a thick subcartilaginous skin, the margin very thin but not striate, plane, livid-ochraceous; edge with a few indistinct fragments of the veil. Gills cinnamon, the extreme margin pale, moderately distant, broad in front, appearing as if adnexed, but the tooth does not properly belong to the gills, but to the stem, and is a small plate inserted between the two laminae of the gills. *Sporules elliptic. Stem 1 in.* high, ⅜ in. thick in the middle where it is swollen, attenuated below, silky, of a beautiful violet, ochraceous at the base; subsquamose, the portion above the obsolete ring striate, stuffed with cottony fibres. Inodorous; taste like that of *A. campestris.* (Berk.)

DELIBUTI.

* *Gills whitish, then pale tan.*

Cortinarius (Myx.) nitidus. Fr.

Pileus 2–5 in. across, truly fleshy, convex then expanded, gibbous or almost obtuse, glabrous, glutinous, honey-coloured tan, at length whitish, disc tan-colour, when dry the pellicle is often cracked in streaks; flesh, as also that of the stem, compact, white; gills truly decurrent in every stage of growth, at first arcuate, crowded, narrow, about 2 lines broad, quite entire, at first whitish, soon tan-colour, at length watery cinnamon; stem stuffed, soft inside, or sometimes hollow, base clavate, 2–4 in. long, ½ in. and more thick, often curved, tough, elastic, even, fibrillose and pallid-white when young, then naked and yellowish; viscid when growing, dry in dry weather, apex at first mealy with white powder;

veil slightly fibrillose, fugacious; spores broadly pip-shaped, 10–12 × 8 μ.

Cortinarius (Myxacium) nitidus, Fries, Epicr., p. 375; Cke., Hdbk., p. 378; Cke., Illustr., pl. 1191.

In beech woods, &c. Subcaespitose.

Stem tough, not bulbous; pileus sometimes white.

** *Gills at first violet, blue, or reddish.*

Cortinarius (Myx.) delibutus. Fr.

Pileus 2–3 in. across; flesh thin especially towards the margin, convex then expanded obtuse, at length more or less depressed, yellowish, covered with viscid hyaline gluten, silky-fibrillose after the gluten has disappeared; gills adnate, becoming rounded or slightly emarginate behind, somewhat distant, 2–3 lines broad, margin pale, serrulate, often crisped, at first blue or bluish-violet, then cinnamon-tan; stem stuffed or hollow above, slightly and equally attenuated upwards from the small sub-bulbous base, 2–4 in. long, 3–4 lines thick, elastic, viscid up to the scanty, fibrillose fugacious cortina; even, glabrous, shining and yellowish-white when dry, apex snow-white; spores elliptical, 8 × 4 μ.

Cortinarius (Myxacium) delibutus, Fries, Monogr., ii. p. 41; Cke., Hdbk., p. 250; Cke., Illustr., pl. 743.

In grassy places.

Small, soft, white within. Gills broad, plane, obsoletely emarginate, with a decurrent tooth.

Var. **elegans.** Pileus and stem quite glabrous, yellow, viscid, shining when dry; flesh yellowish-white, gills pale, crowded.

Cortinarius (Myx.) salor. Fr.

Pileus about 2 in. across, obtusely conic or parabolic when young, soon campanulate and at length expanded with a broad umbo formed from the fleshy disc, very thin towards the margin, small in proportion to the stem, grey, bright violet towards the inflexed margin, at length all one colour, even, glabrous, slightly viscid, fibrillose about the margin when dry; flesh contiguous, white, then yellowish; gills adnate, distant, distinct, 2–3 lines broad, quite entire, at first

pale grey, edge greyish-violet, greyish-tan or cinnamon when adult; stem 1½–3 in. long, conically attenuated from the bulbous base, base 1 in., apex ½ in. thick, white outside and inside, but when young glutinous and bluish from the viscid veil, solid; spores pip-shaped, 8–10 × 6 μ.

Cortinarius (Myxacium) salor, Fries, Epicr., p. 276; Monogr., ii. p. 40; Cke., Hdbk., p. 250; Cke., Illustr., pl. 768.

In woods, &c.

Cortinarius (Myx.) illibatus. Fr.

Pileus 1–2 in. across, campanulate then convex, at length plane, subumbonate, with a viscid pellicle, even, glabrous, yellow, disc darker; flesh white, very thin at the margin; gills adnato-decurrent, arcuate, 2 lines or more broad, thin, crowded, margin quite entire, flesh-colour then tan, at length cinnamon from the spores; stem stuffed, soon hollow, 3 in. long, 2 lines or more thick, slightly attenuated upwards, glabrous, viscid, white, generally with reddish spots above; veil superior, fibrillose, very fugacious; spores granular, 15–16 × 6–7 μ.

Cortinarius (Myxacium) illibatus, Fries, Monogr., ii. p. 42; Cke., Hdbk., p. 250.

In pine woods, &c.

Much smaller and more slender than *C. delibutus*; without a trace of violet colour. (Fries.)

*** *Gills at first ochraceous or cinnamon.*

Cortinarius (Myx.) stillatitius. Fr. (figs. 3, 4, p. 16.)

Pileus 1½–2 in. across, slightly fleshy, flesh soft, watery, hygrophanous, convex then plane, subumbonate, even, glabrous, covered at first, like the contiguous part of the stem with clear blue gluten, when the gluten disappears, livid fuscous, then greyish-white; gills emarginate, scarcely crowded, often distant, 3 lines broad, dark cinnamon; stem hollow, very soft, 2–3 in. long, 3–4 lines thick, equally attenuated, covered with blue gluten at the apex; spores 8 × 4 μ.

Cortinarius (Myxacium) stillatitius, Fries, Epicr., p. 277; Cke., Hdbk., p. 251; Cke., Illustr., pl. 831.

Amongst moss in pastures, &c.

Somewhat resembling *C. elatior*, but smaller, and the veil not floccose.

Cortinarius (Myx.) vibratilis. Fr.

Pileus about 2½ in. across, disc fleshy, remainder thin, convex then plane, obtuse, even, glabrous, very glutinous, yellow, golden and very shining in dry weather: flesh pallid; gills rounded or emarginate, with a decurrent tooth, crowded, thin, pallid then clear ochraceous-cinnamon; stem stuffed or solid, conically attenuated or ventricose (amongst moss elongated, equal, flexuous), fragile, not elastic, whitish, often with a median glutinous ring; spores 8 × 5 μ.

Cortinarius (***Myxacium***) *vibratilis*, Fries, Monogr., ii. p. 43; Cke., Hdbk., p. 251; Cke., Illustr., pl. 744.

In woods.

Habit of *C. armeniacus* and *C. causticus*, but differing from both in the glutinous veil, snow-white stem, not rigid outside, and brighter colour. Smell not unpleasant, but taste very acrid. Pileus often becoming pale, sometimes whitish. (Fries.)

Cortinarius (Myx.) pluvius. Fr.

Pileus ½–1 in. across, slightly fleshy, flesh thin, coloured like the pileus, at first subglobose, then convex, commonly gibbous, when adult and moist pellucidly-striate, hygrophanous, viscid in rainy weather, shining, yellowish-tawny, ochraceous-tan and opaque when dry; when quite young silky near the margin from the white veil; gills adnexed, seceding, ventricose, crowded, yellowish or at first whitish, then ochraceous; stem at first stuffed, then hollow, soft, more or less elongated up to 3 in., equal or slightly attenuated upwards, 2–3 lines thick, even, naked, or with whiter, silky spots, obsoletely viscid; veil fibrillose, involved in mucus, very fugacious, spores granular, 10 × 8 μ.

Cortinarius (***Myxacium***) *pluvius*, Fries, Monogr., ii. p. 48; Cke., Hdbk., p. 251; Cke., Illustr., pl. 769.

In pine woods, &c.

Allied to *C. vibratilis*, but smaller and more slender. Taste at first watery then acrid and pungent. (Fries.)

Subgen. PHLEGMACIUM.

ANALYSIS OF THE SPECIES.

† CLIDUCHII.

Partial veil superior, pendulous as an imperfect ring from the top of the clavate or subequal stem.

* Gills pallid then tan-colour.

** Gills violet or purplish then cinnamon.

*** Gills yellow then cinnamon or ferruginous (not whitish with a violet tinge at first).

**** Gills olivaceous.

†† SCAURI.

Bulb of stem depressed or turbinate, marginate. Stem fleshy, fibrous, veil usually inferior on the stem, arising from the margin of the bulb. Pileus equally fleshy. Gills somewhat sinuate.

* Gills whitish then tan-colour or pale cinnamon.

** Gills violet, blue, or purplish, at length cinnamon.

*** Gills ferruginous, tawny, or yellow.

**** Gills olivaceous.

††† ELASTICI.

Veil simple, thin, fugacious, median or inferior. Stem rather slender, never marginately bulbous nor peronate, but rigidly elastic, externally cartilaginous, polished and shining, apex naked, often becoming hollow; pileus thin, often hygrophanous.

* Gills whitish then tan-colour or dingy cinnamon.

** Gills violet, purplish, or flesh-colour.

*** Gills pure ochraceous, tawny, or ferruginous.

† CLIDUCHII.

* *Gills pallid then tan-colour.*

Cortinarius (Phleg.) triumphans. Fr.

Pileus 3–5 in. broad, fleshy, convex then expanded, viscid, even, at first spotted with minute, adpressed, dusky squamules that soon disappear, yellow; gills emarginate, crowded, quite entire at the margin, 3 lines broad, pallid then tan-colour, stem 3–6 in. long, up to 1/2 in. thick, clavate, furnished downwards with several concentric, squamulose, tawny ring-like zones, whitish, solid; veil superior, fugacious or sometimes interwoven to form an imperfect ring; spores elliptical, 12–14 × 5–6 μ.

Cortinarius triumphans, Fries, Epicr., p. 256; Cke., Hdbk., p. 236; Cke., Illustr., pl. 692.

Cortinarius sublanatus, Hussey, 11, t. 22.

In woods under birch, &c.

Large, beautiful, the remains of the veil on the stem resembling a triumphal column, hence the name. There are two forms, the larger in humid woods: stem solid, firm, attenuated upwards from the ovate bulbous base, 2–5 in. long, 1/2 in. and more thick, striate yellowish-white, tawny squamules are arranged in many circles (or rings) at intervals on the stem (and readily separable), partial veil superior, interwoven, forming a more or less complete ring. Pileus fleshy, not very thick, convexo-plane, obtuse, regular, 3–5 in. broad, viscid when moist and yellowish-tan or ochraceous, yellow when dry; the disk variegated with spot-like squamules or altogether naked. Margin even, not incurved. Flesh of pileus and stem compact, white. Gills emarginate, crowded, 3 lines broad, with a decurrent tooth, and terminating in a contiguous white, mealy zone, densely veined at the sides, plane, white, or very slightly tinted with grey, at length clay colour or almost cinnamon. Small form in dry birch, heathery woods, amongst heaps of leaves. Stem 3–4 in. long, up to 1 in. thick, often curved and rather rooting, variegated below with many concentric rings of yellow squamules, naked above; resembling *P. radicosa*. Ring superior, entire, but thin and deciduous, humid and floccose

towards the margin. Pileus smaller, more compact; golden-yellow or golden. Gills at first greyish-white. (Fries.)

Cortinarius (Phleg.) claricolor. Fr.

Pileus 3–5 in. broad, everywhere fleshy, convex then expanded, at length depressed, at first everywhere, soon towards the margin only, silky-villose, then entirely glabrous, even, for the most part cracked into minute scales, yellow, unchangeable: gills variable in attachment, adnate, emarginate, or free, crowded, at first white, (or in some forms, greyish), then clay-colour, margin unequal: stem 3 in. long, ¾ in. and more thick, solid, firm, white, up to the superior ring with white floccose squamules covered with loose tomentum, above the ring powdered with white meal, the squamules and ring disappear with age, stem sometimes short and bulbous, sometimes elongated, conico-attenuate, or equal; flesh of pileus and stem white; spores obliquely pip-shaped, 11–12 × 6–7 μ.

Cortinarius claricolor, Fries, Epicr., p. 257; Cke., Hdbk., p. 237; Cke., Illustr., pl. 693.

On the ground amongst birch, heather, &c.

Very variable, but always robust and compact. Intermediate between *C. triumphans* and *C. turmalis*; remarkable for the compact and rimosely-squamulose pileus. (Fries.)

Cortinarius (Phleg.) turmalis. Fr.

Pileus 2–4 in. across, compact, flesh white, convex then plane, very obtuse, even, smooth (or sometimes indistinctly piloso-virgate), covered when young with white, fugacious down, soon naked, viscid, dingy yellowish-tan, disc usually darker, not changing colour: gills variously attached, rounded, emarginate, or even with a decurrent tooth, rather broad, crowded, white, then yellow-tan; stem variable in length, sometimes 3 in., at others 6 in. long, up to 1 in. thick, very hard, rigid, cylindrical, sometimes attenuated at the base, white when dry, when young with white down, naked when mature, solid; spores, 8–9 × 5 μ.

Cortinarius (Phlegmacium) turmalis, Fries, Epicr., p. 257; Cke., Hdbk., p. 237; Cke., Illustr., pl. 694.

On the ground. Usually growing in dense clusters, especially amongst heaps of beech leaves. Gills never tinged with blue.

The mealy, floccose covering of the pileus in *C. caperatus* (not British), *C. triumphans*, *C. claricolor*, and *C. turmalis*, is due to the presence of a universal veil; in the first named the stem is annulate, otherwise naked; in the second with concentric rings of tawny squamules; in the third woolly with white squamules; in the present at first with white woolliness, soon naked. (Fries.)

Cortinarius (Phleg.) crassus. Fr.

Pileus 3–5 in. across, flesh very thick, soft, pallid, convex then expanded and somewhat depressed, dingy yellow or dingy tawny-yellow, disc glabrous, the remainder strigose with innate fibrils, opaque, the disc only slightly viscid at first; gills rounded behind, adnexed, rather narrow, crowded, quite entire, pallid, then pale dingy tan-colour; stem 3–4 in. long, 1 in. and more thick at the incrassated base, fibrillose, whitish, apex with white meal, solid; spores rough, almond-shaped, 15 × 7 μ.

Cortinarius (Phlegmacium) crassus, Fries, Epicr., p. 257; Cke., Hdbk., p. 237; Cke., Illustr., pl. 695.

In moist woods.

Cortinarius (Phleg.) balteatus. Fr.

Pileus 3–4 in. across, compact, flattened, very obtuse, commonly depressed at the disc and often unequal, at first viscid, shining when dry, innately floccose, fibrillose and shining near the margin; disc smoky-tawny or bay, pretty violet or lilac near the margin; but this colour often disappears with age or when dry; gills distinctly emarginate, broad in front, rather crowded, quite entire, at first pallid, then somewhat tan-colour (nankin); stem solid, stout, very compact, sometimes equal, sometimes ovately bulbous, 1½–2 in. long, more than 1 in. thick, rarely longer, very minutely velvety and dingy above the fibrillose, adpressed, rusty veil, but in some specimens tomentose and white.

Cortinarius (Phlegmacium) balteatus, Fries, Epicr., p. 7; Cke., Hdbk., p. 237; Cke., Illustr., pl. 696.

In mixed woods.

The size, cuticle of pileus soon becoming flocculose, margin villose and violet distinguish this species from its allies; the gills are sometimes rounded behind, and tan-colour; or subdecurrent, very narrow, and whitish. (Fries.)

Cortinarius (Phleg.) sebaceus. Fr.

Pileus $2\frac{1}{2}$–5 in. across, flesh thin, equal, white, almost plane, often very much waved, viscid, colour of suet, becoming pale, glabrous, but at first sprinkled with white meal; gills emarginate, not crowded, connected by veins, 4 lines broad, tan-colour, paler at the sides; stem solid, stout, compact, never bulbous, often twisted and compressed, 3–4 in. long, sparingly fibrillose, pallid-white; spores pip-shaped, 9 × 7 μ.

Cortinarius (Phlegmacium) sebaceus, Fries, Monogr., ii. p. 7; Cke., Hdbk., p. 238; Cke., Illustr., pl. 697.

In mixed woods.

Distinguished from *C. balteatus* by the general habit, paler colour, and slender, fugacious veil. (Fries.)

Cortinarius (Phleg.) lustratus. Fr.

Pileus 1–2 in. across, equally fleshy, convex then expanded, very obtuse, viscid, even, glabrous, pallid, becoming whitish when dry; flesh rather thick, white; gills rounded behind, almost free, very crowded, narrow, slightly discoloured; stem 1–2 in. long, 4–5 lines thick, equal, rarely attenuated at the base, glabrous except from a few fibrils of the veil, whitish, soft and spongy inside; spores ochraceous.

Cortinarius (Phleg.) lustratus, Fries, Epicr., p. 258; Cke., Hdbk., p. 238; Cke., Illustr., pl. 799.

Amongst grass in sunny places.

Superficially resembling *Entoloma prunuloides*, but with ochraceous spores. Veil fibrillose, white, stretched from the margin of the pileus to the stem.

** *Gills violet or purplish, then cinnamon.*

Cortinarius (Phleg.) varius. Fr.

Pileus 2–3 in. across, hemispherical then expanded, very obtuse, regular, rather viscid, even, glabrous, clear tawny-ferruginous, margin thin, at first incurved, with fragments of the veil attached; flesh firm, white; gills emarginate, thin, rather crowded, at first narrow and purplish-violet, then broader and ochraceous-cinnamon, always entire; stem bulbous but not in the least marginate, compact, $1\frac{1}{2}$–$2\frac{1}{2}$ in. long, 1 in. and more thick, white, adpressedly flocculose, the superior veil pendulous.

Cortinarius (Phlegmacium) varius, Fries. Monogr., ii. p. 8; Cke., Hdbk., p. 238: Cke., Illustr., pl. 698.

Agaricus varius, Schaeff., t. 9.

In woods.

The stem is sometimes taller and almost equal, pileus tawny-yellow, gills blue.

Very variable in size, but nearly constant in colour. Differs from the two last (*A. glaucopus* and *C. callochrous*) in never having a blue tint on the stem. Gills, when young, pale (purplish, the margin yellow, *Schæff.*), at length dilute, of a clay colour inclining to cinnamon. Stem short or elongated, marginato-bulbous or nearly equal, even or scaly. (Fries.)

Cortinarius (Phleg.) cyanopus. Fr.

Pileus 2–3 in. across, flesh thick, hemispherical then expanded, even, viscid, margin thin, glabrous, livid-bay or dingy tawny-brown; gills adnate then adnexed and emarginate, broad, rather crowded, violet, becoming paler; stem about 2 in. long, violet then whitish, naked above the superior, thin veil, 1 in. or more thick, bulb depressed, oblique.

Cortinarius (Phlegmacium) cyanopus, Fries, Epicr., p. 258; Cke., Hdbk., p. 238; Cke., Illustr., pl. 699.

In woods.

Flesh of pileus not tinged violet, but dirty at first; flesh of stem faintly variegated with violet upwards. Bulb large, spongy, depressed, often oblique, more or less rhomboid but not marginate. Pileus livid-bay then tan-colour. Gills in the same cluster varying from intense violet to almost white. (Fries.)

Cortinarius (Phleg.) variicolor. Fr.

Pileus 4–5 in. across, flesh thick at the centre, thin towards the margin, convex then expanded and discoid, viscid, reddish-bay, the tomentose margin violet; gills slightly emarginate with a decurrent tooth, somewhat arcuate, crowded, bluish-tan then cinnamon; stem 4–5 in. long, 1 in. or more thick, base bulbous, diffused upwards into the pileus, at first downy, blue then whitish, solid, flesh coloured like the outside; spores 9–10 × 5 μ.

Cortinarius (Phlegmacium) variicolor, Fries, Epicr., p. 259; Cke., Hdbk., p. 239; Cke., Illustr., pl. 700.

In pine woods, &c.

Very hard, compact, sweet: stem solid, much expanded into the pileus; colour at first bay (rarely entirely covered with violet down), then reddish. (Fries.)

Var. **nemorensis**, Fries, Hym. Eur., p. 339; Cke., Hdbk., p. 239; Cke., Illustr., pl. 863.

Pileus 3–4 in. across, yellowish-bay, bluish at first near the margin, compact, at first smooth, viscid, soon dry, opaque, pilosely rivulose. stem 3 in. long, clavate, hollow and mealy at the apex, gills rounded behind and rather decurrent.

Cortinarius (Phleg.) largus. Fr.

Pileus 4–6 in. across, fleshy especially at the disc, margin thin, convex then flattened, very obtuse, tan-colour or tawny brick-red, slightly viscid, adpressedly silky-fibrillose when dry, rivuloso-squamulose towards the margin, as a rule, sometimes squamulose; when young the pileus is sometimes violet, and also violet at the margin when mature; gills sometimes adnate, sometimes emarginate, crowded, up to ½ in. broad, greyish-tan then cinnamon; stem solid, sometimes short, slightly bulbous, 2½ in. long, usually elongated, 4–5 in. long, 1 in. or more thick, equal, often curved or ascending, fibrillose everywhere, superior veil pendulous, above which the stem is pruinose, white tinged violet, sometimes red when bruised, flesh of the stem entirely fibrillose, firm, greyish-white, becoming whitish when exposed to the air, flesh of pileus similar; spores 12–14 × 7 μ.

Cortinarius (Phlegmacium) largus, Fries, Monogr., ii. p. 10; Cke., Hdbk., p. 239; Cke., Illustr., pl. 701.

In woods, &c.

Subcaespitose, large.

Cortinarius (Phleg.) riederi. Fr.

Pileus 2–3 in. across, flesh watery, thin except at the disc, campanulate then expanded, even, glutinous, ochraceous, shining when dry; gills adnate, rather thick, margin irregular, lilac then cinnamon; stem 3–4 in. long, ⅜ in. thick at the base, clavate, lilac, silky-fibrillose; spores elliptical, smooth, 12 × 5 μ.

Cortinarius (Phlegmacium) riederi, Fries, Epicr., p. 259; Cke., Hdbk., p. 239; Cke., Illustr., pl. 702.

In pine woods.

Stem 4–5 in. long, with tawny fibrils. Pileus 3 in. broad, obtusely umbonate, glutinous when moist, obsoletely virgate, ochraceous. Appears to be allied to the *Myxacium* group. (Fries.)

*** *Gills yellow, then cinnamon or ferruginous.*

Cortinarius (Phleg.) saginus. Fr.

Pileus 4–5 in. across, fleshy, plano-convex, irregular, wavy, viscid, yellow; flesh soft, white; gills truly decurrent, 4–5 lines broad, narrowed at both ends, dingy then pale cinnamon, margin irregular; stem solid, 3 in. long, 1 in. and more thick, somewhat bulbous, fibrillose, yellowish, apex naked; veil fibrillose, fugacious, not very conspicuous.

Cortinarius (Phlegmacium) saginus, Fries, Epicr., p. 260; Cke., Hdbk., p. 240; Cke., Illustr., pl. 703.

In pine woods, &c.

Allied to *Cort. latus*, differing in the fugacious ring and yellow pileus. Gregarious, subcaespitose, large.

Cortinarius (Phleg.) russus. Fr.

Pileus 3–4 in. across, fleshy, convex then almost plane, coppery-rufous, viscid, innately silky-fibrillose near the margin: gills adnate, crowded, about 3 lines broad, rusty-rufous, connected by veins; stem about 3 in. high and nearly 1 in. thick at the base, thinner upwards, adpressedly fibrillose, pallid; veil fugacious; spores elliptical, 8–10 × 5 μ.

Cortinarius (Phlegmacium) russus, Fries, Epicr., p. 261; Cke., Hdbk., p. 240; Cke., Illustr., pl. 751.

In moist woods.

Habit of *Cort. rufo-olivaceus*. Stem somewhat ascending, oblique, not tinged with violet, nor bulbous. Pileus not repand, but often excentric, 4 in. broad, coppery-rufous. Flesh soft, watery, then reddish-white. Taste not acrid, but very nauseous. (Fries.)

Readily distinguished by the coppery-rufous colour of the pileus; bitter, nauseous taste; and the flesh-tinged, soft flesh. Stem stuffed then hollow, 3 in. long, scarcely 1 in. thick, attenuated upwards, but not bulbous; often curved

and ascending, soft, adpressedly fibrillose, pallid-white, apex very slightly pruinose. Cortina thin, fugacious. Pileus fleshy, convex then expanded, obtuse, 4 in. broad, viscid, disc glabrous, innately fibrillose near the margin, everywhere rufous; gills obtusely adnate, (hardly rounded) 4–5 lines broad, crowded, connected by veins, rusty-rufous. Affinities difficult to indicate. (Fries.)

**** *Gills olivaceous.*

Cortinarius (Phleg.) infractus. Fr.

Pileus about 3 in. across, fleshy, convex then expanded, oblique, viscid, everywhere glabrous, olive then yellowish, opaque, having a brownish ridge near the margin, which is at first broken, then revolute and wavy; flesh watery, hardly blue; gills rounded behind, adnexed, crowded, up to 4 lines broad, soft, transversely veined, colour very dark olive-umber; stem solid, 3 in. long, robust, ovately bulbous, adpressedly fibrillose, soft, olive becoming pale; spores pip-shaped, 10 × 8 μ.

Cortinarius (Phlegmacium) infractus, Fries, Epicr., p. 261; Cke., Hdbk., p. 240; Cke., Illustr., pl. 704.

In beech woods, &c.

Robust. Stem brownish-olive, apex smoky, rarely tinged violet. Pileus at first equal, opaque, lurid olive, then yellowish; at length with a brown zone near the margin; flesh dingy, then whitish. Gills quite entire, scarcely crisped, undulated. (Fries.)

Cortinarius (Phleg.) anfractus. Fr.

Pileus 2–3 in. across, equally fleshy, but the thin, broken margin usually very irregular, even, glabrous, dark olive then tawny soot-colour; flesh whitish, with a tinge of violet near the apex of the stem; gills emarginate, distant, 3–4 lines broad, crisped, smoky-olive; stem clavate, immarginate, 2 in. or more long, $\frac{1}{2}$–$\frac{3}{4}$ in. thick, ascending, fibrillose, very dingy, apex violet, often hollow; veil superior, not forming a ring.

Cortinarius (Phlegmacium) anfractus, Fries, Monogr., ii. p. 14; Cke., Hdbk., p. 240; Cke., Illustr., pl. 705.

In woods.

Pileus never zoned, but sometimes smoke-colour when moist; yellowish-olive and spotted when dry. Thinner than *C. infractus*, at first usually more sinuous and irregular. Stem ascending or curved. (Fries.)

Cortinarius (Phleg.) Berkeleyi. Cooke.

Pileus 3–6 in. across, convex then expanded, very fleshy, viscid, shining when dry, brown, darkest in the centre, often with a tinge of lilac towards the margin, disc even, for about an inch round the margin coarsely plicate or rugulose, but not evenly striate, flesh ½ in. thick except the extreme edge, white, margin with purple tinge; gills rather close, narrow, slightly emarginate, cinnamon with an olive tinge at first; stem 4–6 in. long, 1 in. thick above, base bulbous, solid, flesh white, silky-fibrillose, white, veil persistent as an indistinct brown broken line on stem; spores yellow-brown, elliptic-fusiform, rugulose, 15–16 × 8–9 μ.

Cortinarius (Phlegmacium) Berkeleyi, Cke., Hdbk., p. 240; Cke., Illustr., t. 706 (*not good, margin too regularly grooved*); Cke., Illustr., t. 707, is also said to be this species, but if really so it is a very marked variety.

Cortinarius torvus, Fries, Kalchbrenner, t. xxi., fig. 1 (excellent).

Cortinarius anfractus, Berk., not of Fries.

In woods. The present species is considered by continental mycologists as being the true *C. torvus* of Fries, but the British specimens that I have seen fresh have a distinctly viscid pileus, whereas *C. torvus* is a *Telamonia*. The present species was named *C. anfractus* by Berkeley, but is certainly not that species. When young the whole fungus is involved in a whitish volva, patches of which frequently remain on the pileus.

†† SCAURI.

* *Gills whitish, then tan or pale cinnamon.*

Cortinarius (Phleg.) multiformis. Fr.

Pileus 2–3 in. across, fleshy, regular, convex then expanded, very obtuse, becoming depressed, generally very viscid, even, glabrous, every portion the same colour, yellow, yellow-tan, tawny, &c., sometimes spotted, fibrilloso-virgate, or lacunose;

flesh white, at first compact then soft, that of the pileus becoming tinged yellow; gills emarginate, free or with a minute decurrent tooth, very thin, crowded, straight, not **broad,** at first white then yellowish-tan; stem solid, 2–4 in. long, about ½ in. thick, equal or attenuated, somewhat glabrous or adpressedly fibrillose, naked (not pruinose) white, then yellowish, bulb oblong, globose, or depressed, 1 in. thick; spores ochraceous, rough, 10–12 × 5 μ.

Cortinarius (Phlegmacium) multiformis, Fries, Epicr., p. 263; Cke., Hdbk., p. 241; Cke., Illustr., pl. 708.

In woods.

Distinguished by the absence of a violet tinge, not hygrophanous, flesh white, gills crowded, serrulate, at first whitish. (Fries.)

Var. **flavescens**, Cke., Hdbk., p. 241; Cke., Illustr., pl. 709.

Similar in size to the typical form; pileus tawny-yellow, flesh tinged yellow, deep yellow at base of stem; gills yellow.

Cortinarius (Phleg.) napus. Fr.

Pileus 2–3 in. across, flesh firm, white, with a horny line near the gills; convex then plane, obtuse, even, glabrous, glutinous, smoke-colour then tawny-bay, margin broken; gills emarginate, rather distant, broad, crisped, smoky-white, sides hyaline; bulb distinct, obconic, acutely and obliquely marginate, from this springs the stem, about 2 in. long, ½ in. thick, equal, ascending, glabrous, firm, white, base at length yellowish; spores elliptical, smooth, 10 × 5 μ.

Cortinarius (Phlegmacium) napus, Fries, Epicr., p. 263; Cke., Hdbk., p. 241; Cke., Illustr., pl. 710.

In pine woods, &c.

Allied to *C. rapaceus*, but quite distinct in the broad, crisped, rather distant, smoky-white gills. (Fries.)

Cortinarius (Phleg.) allutus. Fr.

Pileus about 1 in. across, flesh thin, rufescent, conical then convex, finally expanded and sometimes depressed, smooth, viscid, reddish russet, margin darker; gills adnate, rather crowded, crenulate, thin, whitish then rufescent; stem about 1 in. long, viscid, white, apex mealy, reddish-striate below, marginately bulbous.

Cortinarius (Phlegmacium) allutus, Fries, Epicr., p. 263; Cke., Hdbk., p. 411; Cke., Illustr., pl. 752.

In pine woods.

Pileus orange-yellow, disc paler, when moist, deep yellow when dry. Gills sometimes decurrent. Small. (Fries.)

Cortinarius (Phleg.) talus. Fr.

Pileus 2–3 in. across, equal, convex then plane, even, glabrous, viscid, dingy-yellowish, becoming pale, margin somewhat yellowish-olive; flesh watery, dingy pallid-white, variegated with hyaline spots and a horny line at the junction of the gills; gills emarginate, rather crowded, clear straw-colour or pallid ochraceous, soon discoloured; stem solid, 3 in. long, ½ in. thick, equal, cylindrical, not oblique, almost glabrous, pallid, bulb small, subrotund, marginate; spores 8–9 × 4–5 μ.

Cortinarius (Phlegmacium) talus, Fries, Epicr., p. 263; Cke., Hdbk., p. 242; Cke., Illustr., pl. 711.

In woods.

Very pretty, closely allied to *C. turbinatus*, but distinguished by the difference in colour. (Fries.)

** *Gills violet, blue, or purplish, then cinnamon.*

Cortinarius (Phleg.) glaucopus. Fr.

Pileus 3–4 in. across, flesh rather thin towards the margin, becoming yellowish, at first convex and incurved then expanded, rather wavy, viscid, becoming floccosely squamulose and fibrillose, olive-bay at first, soon tawny-yellow; gills emarginate, broad, bluish then tawny-cinnamon; stem 2½–3 in. long, ¾ in. thick, striate, bluish then pallid yellow, marginately bulbous; spores 8 × 4–5 μ.

Cortinarius (Phlegmacium) glaucopus, Fries, Epicr., p. 264; Cke., Hdbk., p. 242; Cke., Illustr., pl. 712.

In pine woods.

Stout, large, at first short, stem bulb-like then elongated, 3–4 in. long, straight, always thick, pale blue inside at first. Pileus at first olive-bay, soon tawny-yellow, with an elevated brown zone near the margin, as in *C. infractus* and *C. purpurascens*. (Fries.)

Tufted, irregular. Whole plant when cut or bruised of a beautiful violet. Pileus 3 in. broad, at first viscid, dirty umber-tawny and brown, then tawny with a very faint tinge of purple, expanded, shining, minutely fibrillose, the fibrillae quite adpressed. Gills very broad, at first violet then cinnamon, emarginate, distant. Stem 1½ in. high, ½–1 in. thick, composed of fibres, bulbous, at first tinged with violet, nearly smooth except towards the bulb, where are a few fibrillae dusted with the sporules. (Berk.)

Cortinarius (Phleg.) calochrous. Fr.

Pileus about 2 in. across, compact, convex then plane, obtuse, viscid, spotted and often stained, tawny, yellowish towards the margin, which is at first involute, often flexuous when expanded; flesh pure white; gills emarginate, crowded, dark purple-blue, margin serrate; stem 1½–2 in. long, ¾ in. thick, equal, with a distinctly and abrupt marginate bulb, which is sometimes depressed, fibrillose, yellowish, never becoming blue, solid and firm; veil yellow, marginal, fugacious; spores 7–8 × 4 μ.

Cortinarius (Phlegmacium) calochrous, Fries, Epicr., p. 265; Cke., Hdbk., p. 242; Cke., Illustr., pl. 713.

In woods, especially beech.

Stem equal, short, not blue. Pileus commonly tawny, yellow near the margin, which is involute, often flexuous, but not arched. (Fries.)

Pileus 3–4 in. broad, truly carnose, viscid when moist, nearly smooth with a satiny lustre, olivaceous-tawny when young, tawny when full grown, flesh tinged with yellow, and when young very dilute violet. Veil arachnoid, the threads arising partly from the apex, partly from the middle of the stem. Gills close, thin, emarginate, serrulate, at first bright violet, then ferruginous with a dilute violet tinge; not at all olivaceous. Sporules elliptic. Stem 1–3 in. high, 1 in. thick, fibrillose, the fibrillae above copious and densely dusted with the sporules, bulbous, violet towards the gills, the rest whitish, when young very shaggy at the base. The plant described above seems to be the *var. b.* of Fries. The taste is astringent and the odour nauseous, like that of *A. radicosus*, whereas Fries describes his species as inodorous and insipid. The bright violet of the gills is not very

persistent, but this may be owing to
summer in which it occurred. (Berk.)

Cortinarius (Phleg.) caerulesce

Pileus 2–3 in. across, equally fleshy
obtuse, regular, even, almost glabrous, l
gate; viscid, when dry shining or opaque
tan-colour, varying to yellowish-brow
rounded behind, adnexed, thin, close
broad, at first clear intense blue the
at length dingy cinnamon; stem about
(bulb more than an inch), firm, equally
at first fibrillose, bright violet, then
whitish, naked, bulb often disappear
fibrillose, fugacious; spores elliptical, 9

Cortinarius caerulescens, Fries, Epicr.,
p. 242; Cke., Illustr., pl. 721, 722.

Amongst moss in woods, &c.

Neither the gills nor the flesh change
a point which distinguishes the present
When young every part is generally
any. (Fries.)

Cortinarius (Phleg.) purpurasc
14, p. 16.)

Pileus 4–5 in. across, fleshy, disc co
variable, covered with a dense layer o
when dry, bay or reddish then tawny
often depressed round the margin, whic
then wavy, marked with a raised brow
clear blue; gills broadly emarginate, 3
crowded, bluish-tan, then cinnamon,
bruised; stem about 3 in. long, ⅝ in. a
bulbous, everywhers fibrillose, intense
very compact, juicy, becoming purplis
bulb submarginate; spores elliptical, 1

Cortinarius purpurascens, Fries, Epicr.
p. 243; Cke., Illustr., pl. 723, 724.

In pine woods, &c.

Gills becoming spotted with purp
character that separates the present spe

especially *Cortinarius glaucopus*. The form described above is short, robust, very compact, juicy, and becoming purplish blue when bruised. A second form occurs in dense beech woods; very large, rather caespitose, stem longer, rather twisted, pileus undulate, up to 8 in. broad, brownish-tan, then cinnamon from the falling spores. Gills at first greyish purple; remainder as in typical form. (Fries.)

Var. **subpurpurascens**, Fries, Epicr., p. 265; Cke., Illustr., pl. 725; Cke., Hdbk., p. 243.

Pileus not compact, obtuse, at length very much dilated, and undulately waved, viscid, tawny smoke-colour, becoming pale, obsoletely fibrilloso-virgate, rather spotted; stem at length hollow, 3–4 in. long, ½ in. thick, subcylindrical, marginately bulbous, fibrillose below, naked above, glabrous, slightly striate, pale bluish or whitish; gills sometimes emarginate, almost free, sometimes decurrent, pallid then cinnamon, becoming purplish when bruised. Flesh soft, white (very dilute blue) unchangeable.

In woods.

*** *Gills ferruginous, tawny, or yellow.*

Cortinarius (Phleg.) dibaphus. Fr.

Pileus 3–4 in, across, convex then plane, at length depressed, viscid, glabrous, purplish, the disc becoming yellowish, at length variegated with lilac; flesh yellow with a violet line under the cuticle; gills adnate, slightly rounded, rather crowded, about 3 lines broad, purplish-ferruginous, margin quite entire; stem about 3 in. long, stuffed, marginately bulbous, about ½ in. thick, fibrillose, yellow, shining, apex purplish, yellow within; spores 12 × 5 μ.

Cortinarius (Phlegmacium) dibaphus, Fries, Monogr., ii. p. 21; Cke., Hdbk., p. 243.

Cortinarius luteopes, Secr. n. 250.

In woods.

Taste and smell none.

Var. **xanthophyllus**, Cke., Hdbk., p. 243; Cke., Illustr., pl. 753.

Gills at first, and for a long time, yellow.

Cortinarius (Phleg.) turbinatus. Fr.

Pileus 2–4 in. across, fleshy, convex then expanded, obtuse, at length depressed, orbicular, even, glabrous, viscid, dingy yellow or greenish, hygrophanous, opaque when dry; flesh soft, white; gills attenuato-adnate, thin, crowded, broad, quite entire, at first pale yellowish then somewhat ferruginous; stem equal, except the distinctly marginate, globoso-depressed bulb, cylindrical, stuffed then hollow, commonly about 2 in. long, but sometimes elongated, yellowish; spores 14–16 × 7 μ, rough.

Cortinarius (Phlegmacium) turbinatus, Fries, Epicr., p. 266; Cke., Hdbk., p. 243; Cke., Illustr., pl. 714.

Agaricus turbinatus, Bull., t. 110.

In beech woods, &c.

Distinguished amongst its allies by the regular, hygrophanous pileus, quite entire dingy ochraceo-ferruginous gills, without a trace of blue or purple colour. (Fries.)

Cortinarius (Phleg.) corrosus. Fr.

Pileus 2–3 in. across, fleshy, soon expanded and umbilicate, smooth, viscid, ferruginous then pale tan-colour, at length rivulose, somewhat floccose, opaque when dry, flesh hard, white; gills emarginate, closely crowded, narrow, somewhat ferruginous at first; stem 1–1½ in. long, ½–⅝ in. thick, imperfectly hollow, naked and white at the apex, bulb depressed, marginate; veil fibrillose, white.

Cortinarius (Phlegmacium) corrosus, Fries, Epicr., p. 266; Cke., Hdbk., p. 244; Cke., Illustr., pl. 715.

In pine woods.

Smaller than *C. fulgens*. Pileus ferruginous then tan-colour, opaque, 2–3 in. across, edge of the gills wavy, rounded, free. Smell not remarkable. (Fries.)

Cortinarius (Phleg.) fulgens. Fr.

Pileus 2–3 in. across, very fleshy, convexo-plane, obtuse, viscid, sometimes with drop-like spots, at length silky-fibrillose or minutely squamulose, deep, persistent tawny-orange; flesh very compact, yellowish-white, at length spongy and tan-colour; gills emarginate, 3 lines broad, rather crowded, quite entire, at first bright yellow, at length rather

distant, tawny or ferruginous from the spores; stem solid, short, yellow, densely fibrillose from the yellow veil (viscid in moist weather), woolly, about 3 in. long when adult, bulb depressed, marginate, oblique; spores elliptical, 9 × 5 μ.

Cortinarius fulgens, Fries, Epicr., p. 267; Cke., Hdbk., p. 244; Cke., Illustr., pl. 716.

In woods.

Very showy, robust, tawny-golden, woolliness of the stem viscid when young.

Cortinarius (Phleg.) fulmineus. Fr.

Pileus 1½–2 in. across, flesh thick, convex then almost plane, viscid, tawny, margin orange, with small agglutinated rust-coloured scales; gills rounded behind, adnexed, crowded, 1½ line broad, at first pure yellow; stem about 1 in. long, ½–¾ in. thick, yellow, apex with a white veil, solid, bulb large, marginate, rooting, more or less triangular in section; spores elliptic-fusiform, rough, 10 × 5–6 μ.

Cortinarius (*Phlegmacium*) *fulmineus*, Fries, Epicr., p. 267; Cke., Hdbk., p. 244; Cke., Illustr., pl. 717.

In shady woods.

Very short, robust, sweet. Stem not filamentous, slightly viscid at first, bulb larger than the pileus. Pileus tawny, almost brown, margin orange. Flesh thick, white, often yellow at the margin or tinged yellow everywhere. (Fries.)

Differing from *C. corrosus* in the yellow stem and presence of agglutinate scales on the viscid pileus. *C. fulgens* differs from the present species in the spongy, pale tan-coloured flesh.

Cortinarius (Phleg.) orichalceus. Fr.

Pileus 2–4 in. across, fleshy, convex then expanded, glabrous, covered with a viscid pellicle, reddish-tawny, disc rubiginous, cracked into squamules, margin becoming livid; gills somewhat sinuate or rounded behind, annexed, 3–4 lines broad, greenish sulphur-colour; stem 2–3 in. long, ½ in. thick, equal, fibrillose, yellowish, marginately bulbous, solid.

Cortinarius (*Phlegmacium*) *orichalceus*, Fries., Epicr., p. 267; Cke., Hdbk., p. 244; Cke., Illustr., pl. 754.

Under pine-trees, &c.

Flesh sometimes white, yellow or greenish-yellow at the

margin, sometimes dirty, all alike, watery, stem almost naked, or fibrillose and viscid, 2–3 in. long, ½ in. thick, bulb depressed. Pileus 3 in. broad, colour peculiar, gills very broad behind. (Fries.)

Cortinarius (Phleg.) testaceus. Cooke.

Pileus 3–4 in. across, fleshy, convex then flattened and obtusely umbonate, or depressed, brick-red, rather vinous, growing paler with age, smooth, even, viscid; gills 3–5 lines broad, adnate and a little emarginate, scarcely crowded, dusky cinnamon; stem 3–4 in. long, ⅜ in. thick, attenuated upwards from a submarginate, bulbous base, whitish above, becoming rufous about the base, longitudinally fibrously striate below, solid, flesh with a tinge of flesh-colour, becoming ruddy at the apex and base; spores elliptical, ends rather acute, rough, 16 × 8 μ.

Cortinarius (Phlegmacium) testaceus, Cke., Hdbk., p. 378; Cke., Illustr., pl. 1190.

On the ground.

**** *Gills olivaceous.*

Cortinarius (Phleg.) prasinus. Fr.

Pileus 2–3 in. across, compact, convexo-plane, very obtuse, regular, viscid, spotted as if scaly, sometimes dingy bluish-green, sometimes smoky tawny, margin regularly involute; flesh dirty white; gills emarginate, not crowded, rather distant when full grown, rather crisped, yellowish olive or almost olive, dark greyish-olive at the base; stem about 2 in. long, ⅜ in. thick, base marginately bulbous, pallid green, not becoming violet, solid, flesh greenish white; veil scanty, whitish or greenish; spores 10 × 5 μ, smooth.

Cortinarius (Phlegmacium) prasinus, Fries, Epicr., p. 268; Cke., Hdbk., p. 245; Cke., Illustr., pl. 735.

In beech woods, &c.

Short, firm, mild, about the size of *Cort. calochrous.*

Cortinarius (Phleg.) atrovirens. Kalchbr.

Pileus 3–4 in. across, flesh rather thin, tinged green, convex, even, viscid, dark green or olive-umber; gills adnate, crowded, 2–3 lines broad, yellowish green then cinnamon;

stem about 3 in. long, fibrillose except the somewhat turbinate, marginate bulb, solid, flesh tinted with bluish-green; spores elliptical, 10 × 6 μ.

Cortinarius (*Phlegmacium*) *atrovirens*, Kalchbr., Hym. Hung., p. 34, t. 19, f. 3; Cke., Hdbk., p. 245; Cke., Illustr., pl. 736.

In pine woods, &c.

Resembling *C. prasinus* in colour, but differing in the pileus not being spotted with scales, and in the sulphur-coloured mycelium.

Cortinarius (Phleg.) scaurus. Fr.

Pileus 1½–3 in. across, flesh thick at the disc, becoming very thin towards the margin and at length slightly striate, viscid, smoky-tawny, spotted, becoming pale; stem about 3 in. long, 3–5 lines thick at the apex, attenuated upwards from the marginate bulb, tinged with green or blue, solid; gills attenuated behind, adnexed, thin, crowded, purplish-olive; spores 10 × 5 μ.

Cortinarius (*Phlegmacium*) *scaurus*, Fries, Epicr., p. 268; Cke., Hdbk., p. 245; Cke., Illustr., pl. 755.

In woods.

Stem greenish or bluish, never yellow. Pileus smoky-tawny, becoming fulvous when dry, flesh thin, watery, insipid. Gills narrow, almost linear, sometimes purplish, sometimes olive, also smoky. (Fries.)

Soft, insipid, pileus 2–3 in. broad, sometimes depressed. Gills rather thin, at length cinnamon. Stem about 3 in. high, fibrillose, sometimes marginato-bulbous, sometimes when growing amongst moss nearly equal. (Fries.)

Cortinarius (Phleg.) herpeticus. Fr.

Pileus 1½–3 in. across, fleshy, margin thin, convex then plane, obtuse, even, glabrous, sparingly viscid, at first olive, then dingy tan, the disc becoming pale; gills slightly emarginate, at first very crowded and dark smoky-violet, then slightly crowded, 2–3 lines broad, smoky-violet; stem at first short, then 2–3 in. long, ½ in. thick, unequal, somewhat twisted, solid, firm, but spongy within and often hollow at the apex, fibrillose, pallid, scarcely tinged violet, the napiform bulb marginate; spores 10 × 6 μ.

Cortinarius (Phlegmacium) herpeticus, Fries, Epicr., p. 268; Cke., Hdbk., p. 245; Cke., Illustr., pl. 849.

In woods, &c.

††† ELASTICI.

* *Gills whitish, then tan or dingy cinnamon.*

Cortinarius (Phleg.) cumatilis. Fr.

Pileus 3–4 in. across, flesh thin except at the disc, convex then expanded, obtuse, disc brownish, remainder pale dingy lilac, covered with bluish-violet tinted gluten; gills adnexed, crowded, narrow, margin serrate, white then tan-colour; stem about 3 in. long, ½ in. or more thick at the apex, somewhat bulbous, and attenuated upwards, apex a little cortinate, universal veil forming an abrupt volva at the base, whitish.

Cortinarius (Phlegmacium) cumatilis, Fries, Epicr., p. 269; Cke., Hdbk., p. 246; Cke., Illustr., pl. 726.

In copses, &c.

A very fine species, sometimes solitary, stem stout, bulbous; at others caespitose, stem longer and curved, universal veil membranaceous, agglutinated at the base, but separable, at first continuous with the blue pellicle of the pileus. (Fries.)

Cortinarius (Phleg.) serarius. Fr.

Pileus 3–4 in. across, fleshy, convex then expanded, gibbous, unpolished, opaque, reddish-tan; stem solid, equal, fibrillose, shining, white, as is also the flesh; gills arcuately adnexed, with a decurrent tooth, crowded, pale tan-colour.

Cortinarius (Phlegmacium) serarius, Fries, Epicr., p. 269; Cke., Hdbk., p. 246.

In woods.

Stem 4 in. long, entirely fibrous. Pileus 3–4 in. broad, even and glabrous but not polished, somewhat silky-pruinose; reddish-tan coloured, by which it is more especially distinguished. Flesh 3 lines thick, with a hyaline line near the gills. (Fries.)

Having seen a copy of Fries's drawings of this species, we are of opinion that the evidence of its being British is very

slender and doubtful. The Scotch specimens, if true, were by no means typical. (Cooke.)

Cortinarius (Phleg.) emollitus. Fr.

Pileus 3–4 in. across, fleshy, lax, rather wavy, minutely fibrilloso-virgate, viscid, tawny, ochraceous-yellow and shining when dry, margin thin, incurved; stem 1½–2 in. long, ½ in. and more thick, stuffed, unequal, scarcely bulbous, often compressed, fibrillose, soft, white then tinged yellow, veil fugacious; gills emarginate, up to ⅓ in. broad, rather distant, smooth, soft, white then ochraceous.

Cortinarius (Phlegmacium) emollitus, Fries, Epicr., p. 269; Cke., Hdbk., p. 246; Cke., Illustr., pl. 727.

Amongst grass in beech woods, &c.

Often caespitose, very variable, but very distinct from neighbouring species in the acrid taste; snow-white very soft flesh; soft, imperfectly hollow stem; somewhat deformed pileus, and rather distant gills.

A small form occurs with a slender stem, pileus plane, fragile.

Cortinarius (Phleg.) cristallinus. Fr.

Pileus about 3 in. across, equally fleshy, but thin, expanded, glabrous, viscid, shining, hygrophanous, disc watery-pallid, towards the margin silvery-white, shining, when dry entirely whitish; gills emarginate, thin, 3 lines broad, crowded, tan-colour; stem 3 in. long, 4 lines thick, hollow or attenuated at the base, fragile, fibrillose, whitish straw-colour; spores $8 \times 4\ \mu$.

Cortinarius (Phlegmacium) cristallinus, Fries, Monogr., i. p. 30; Cke., Hdbk., p. 246; Cke., Illustr., pl. 728.

In mixed woods, amongst leaves.

Taste very acrid. A form occurs having the pileus yellowish-white, stem slightly viscid, gills rather decurrent. (Fries.)

Cortinarius (Phleg.) decoloratus. Fr.

Pileus 2–4 in. across, flesh thin, equal, campanulate then convex, obtuse, soft, glabrous, tan-colour, disc darkest, corrugated when old, viscid; gills emarginate, adnate, or decurrent, depending on the situation and mode of growth, slightly crowded, 3 lines broad, tan-colour then cinnamon; stem

about 3 in. long, ½ in. or more thick below, stuffed, slender, somewhat equal, slightly thickened downwards, ascending, fibrillose, silvery shining, apex glabrous, not mealy; spores 7 × 3–4 μ.

Cortinarius (Phlegmacium) decoloratus, Fries, Monogr., ii. p. 30; Cke., Hdbk., p. 247; Cke., Illustr., pl. 729.

In beech woods, &c.

Very variable, there are three or four very remarkable forms, which at first sight appear distinct, but all agree in essential points. The typical form, described above, resembles *C. tabularis* in stature and general appearance, but differs in having the pileus viscid, never silky from the veil, stem never squamulose, &c.

Form (*b*), occurring under birches. Bulb at first small and rounded, but soon disappearing, soft, the attenuated stem becoming yellowish. Gills at first greyish-white. Pileus a little darker, floccosely squamulose or rivulosely granular when dry.

Form (*c*), occurring in pine woods. Smaller and slenderer, pileus even, gills pallid-tan. (Fries.)

** *Gills violet, purplish, or flesh-colour.*

Cortinarius (Phleg.) decolorans. Fr.

Pileus fleshy 1½–3 in. across, convex then expanded, somewhat gibbous, equal, even, glabrous, viscid, persistently yellow all over; flesh thin, firm, white; gills sinuately adnexed, crowded, thin, 3 lines broad, purplish, soon cinnamon, not changing colour when bruised; stem 2–3 in. long, 3–4 lines thick, equally attenuated, white, glabrous except for the veil; spores pip-shaped, 10 × 8 μ.

Cortinarius (Phlegmacium) decolorans, Fries, Monogr., ii. p. 31; Cke., Hdbk., p. 247; Cke., Illustr., pl. 730.

In pine woods, &c.

For a long time considered as a slender form of *C. varius*, from which it differs in the slender, polished, glabrous stem without a bulb, the more slender pileus of one colour, and the somewhat persistent median veil.

Cortinarius (Phleg.) porphyropus. Fr.

Pileus 1½–3 in. across, fleshy, margin very thin, flesh soft,

white, soon becoming purplish-lilac when broken, convex then plane, obtuse, even, innately virgate, viscid, livid yellowish or tan-colour, not changing colour when bruised; gills rounded or emarginate, rather crowded, 2–4 lines broad, purplish then watery cinnamon; stem 2–4 in. long, about 3 lines thick, fragile, lilac-violet both outside and inside, soon becoming pale or whitish, but changing to lilac-violet when bruised; veil inferior, fibrillose, spores 10–12 × 7 μ.

Cortinarius (Phlegmacium) porphyropus, Fries, Epicr., p. 271; Cke., Hdbk., p. 247; Cke., Illustr., pl. 731.

In woods.

Stem always slender, frequently equal, slightly elastic but fragile, becoming pale, but becoming lilac when bruised. Pileus brownish-tan, livid. Flesh thin, white. (Fries.)

Cortinarius (Phleg.) croceocoeruleus. Fr.

Pileus ¾–1½ in. across, flesh thin, convex then plane, obtuse or gibbous, even, glabrous, viscid, lilac or pale violet; flesh watery, pallid, and like the other parts, becomes tinged with purple when crushed; gills attenuated or broadly emarginate, with a very delicate decurrent tooth, plane, rather distant, lilac then saffron-tan; stem hollow, about 2 in. long, somewhat equal or sometimes attenuated at the base, 2–3 lines thick, even, glabrous, naked, fragile, white; spores 8 × 5 μ.

Cortinarius (Phlegmacium) croceocoeruleus, Fries, Syst. Myc., i. p. 238; Cke., Illustr., pl. 732; Cke., Hdbk., p. 247.

Under beeches, &c.

Small, flesh watery, unchangeable. Veil white. (Fries.)

*** *Gills pure ochraceous, tawny, or ferruginous.*

Cortinarius (Phleg.) corruscans. Fr.

Pileus 3–5 in. across, fleshy, soon flattened and at length depressed, even, glabrous, viscid, shining when dry, yellow-ochraceous, often spotted with tawny; flesh soft, white; gills adnate, with a decurrent tooth, not sinuate, thin, very narrow in proportion to the size of the pileus, 1–2 lines at most, very crowded, quite entire, clear ochraceous; stem solid, elastic, 3–6 in. long, ½ in. thick, equal, dilated at the apex, fibrillosely striate, pure white.

Agaricus stipticus, Persoon, Obs., i. p. 8, t. 5, f. 3.

On rotten wood.

Pileus watery, not gelatinous, very hygrophanous, margin slightly striate when moist, at length depressed behind.

Pileus watery, rather fleshy, soft, fragile, altogether plane, horizontal, extended behind in a straight line into a very short, white, tomentose stem; reniform or cuneate, watery cinnamon when moist, margin slightly striate, even and whitish when dry, truly hygrophanous, at length depressed behind, subsessile. Gills originate determinately behind, crowded, linear, thin, whitish then watery cinnamon. Intermediate between *Crepidotus mollis* and *C. byssisedus*. (Fries.)

Crepidotus alveolus. Lasch.

Pileus 1–2½ in. across, flesh about 2 lines thick, whitish, soft, lateral, obovate, repand, plane, glabrous, ochraceous-brown, sessile or produced behind into a short, stem-like, *tomentose base*; gills determinate, broad, crowded, pale then brownish-tan.

Agaricus alveolus, Lasch, no. 582; Fries, Hym. Eur., p. 275; Cke., Hdbk., p. 189.

On trunks. Closely allied to *Crepidotus mollis*, but more fleshy, darker coloured, becoming pale when dry, sometimes olive-tinged near the margin.

It is doubtful whether the figure in Cke., Illustr., pl. 490A, called *Agaricus* (*Crepidotus*) *alveolus*, Lasch, is, the right fungus; the specimens measure up to 1 in. across, subreniform, ochraceous-tan, very convex and subumbonate behind, and attached by a small point; gills distant, about 2 lines broad, tawny-ochraceous.

Dimidiate, laterally subsessile or produced behind into a short stem-like tomentose base, horizontal, pileus fleshy, soft, obovate, sometimes repand, almost plane, 2 in. and more long, even, glabrous, moist, ochraceous-brown, sometimes tinged with olive towards the margin, pale when dry; gills determinate, not decurrent from the base, broad, crowded, brownish-tan. Closely allied to *Crepidotus mollis*, differing in the more fleshy rather wedge-shaped pileus, the darker colour of every part, and especially the broader gills. (Fries.)

olepis. Fr. (figs. 1–3, p. 3.)
ross, rather fleshy, dimidiate, sessile, y point, otherwise free behind, pale, ute, crowded, rufescent scales; gills point of attachment, rather broad, at

) *calolepis*, Fries, in Vet. Ak. Förhandl., . 190; Cke., Illustr., pl. 499B.
aspen; branches, &c.
sessile tubercle. Pileus scarcely ½ in. gelatinous. Spores ferruginous-brown.

istellaris. Fr.
s, rather fleshy, flaccid, exactly lateral, , minutely villous, tan-colour; stem ry excentric, up to ¼ in. long, villous, white; gills determinate, rounded rownish-cinnamon.
s) *haustellaris*, Fries, Syst. Myc., i. p. 190; Cke., Illustr., pl. 515A.
of poplar, &c.
common with *Crepidotus calolepis*, but Small, regular, not caespitose; espe- l by the subconical stem and almost

bryus. Fr.
ross, membranaceous, resupinate, quite vertex, silky then smooth, white; gills centre, thin, crowded, white, then

) *epibryus*, Fries, Syst. Myc., i. p. 275; Cke., Illustr., pl. 516C.
&c.
p-shaped, small, without a rudiment of uced at the vertex or point of attach-

es. Structure and general appearance *is*, but conspicuously different in the cup-shaped, always entire, not effuse-

reflexed and without a rudimentary stem; pileus on the contrary adnate behind, vertical, slightly fleshy, 2–3 lines and more broad, adpressedly silky, even, whitish. Gills springing from a central point, thin, closely crowded, parallel, whitish, then gilvous (not reddish). (Fries.)

Crepidotus Phillipsii. B. & Br.

Pileus about 3 lines across, rather fleshy, oblique, striate, smooth, pale umber; gills narrow, ventricose, slightly adnate, pale dingy tan; stem short, solid, incurved at the base; spores elliptical, pale rusty-brown, 5–7 × 2·5 μ.

Agaricus (Crepidotus) Phillipsii, Berk. & Br., Grev., vol. vi. p. 101; Cke., Hdbk., p. 190; Cke., Illustr., pl. v. 515c.

On dead grass. Distinguished by the dingy, umber pileus, and the short, incurved stem.

Crepidotus pezizoides. Nees.

Pileus about 2 lines across, sessile, thin, cup-shaped, then reflexed, mealy, subtomentose, whitish; gills radiating from the centre, rather distant, olive-brown, then dull tawny.

Agaricus pezizoides, Nees, Act. Nat. Curios. ix. t. 6, f. 18 (young stage); Cke., Hdbk., p. 191; Cke., Illustr., pl. 516D; Fries, Hym. Eur., p. 277.

On rotten branches. Distinguished amongst the minute white species by the mealy pileus.

Crepidotus Ralfsii. B. & Br.

Pileus ½–⅜ in. across, flesh white, thickish, equal, flat, margin involute, delicately hispid or chaffy, yellow, fixed by cottony mycelium; stem obsolete; gills ventricose, rather broad, pale tan-colour, margin whitish.

Agaricus (Crepidotus) Ralfsii, Berk. & Br., Ann. Nat. Hist., (1883), p. 372, n. 2008; Cke., Hdbk., p. 191; Cke., Illustr., pl. 516D.

On decaying wood. Rather gregarious.

Crepidotus chimnophilus. B. & Br.

Pileus 2–3 lines across, flesh rather thick, convex, margin incurved, villous, whitish; stem very short or obsolete, excentric; gills attenuated behind, distant, narrow, pale tan; spores pale cinnamon, 5 × 3 μ.

Agaricus (*Crepidotus*) *chimnophilus*, Berk. & Br., in Berk. Outl., p. 164; Cke., Hdbk., p. 191; Cke., Illustr., pl. 515A.

On small dead branches of *Pyrus torminalis*. Gregarious. Known amongst the small white species by the villous pileus and few, distant gills.

Crepidotus rubi. Berk.

Pileus about ¼ in. across, fleshy, convex-plane, margin incurved, dingy pale yellowish tan, covered with very minute crystalline meal; gills adnato-decurrent, rather broad, greyish then umber, slightly ventricose; stem about 2–3 lines long, incurved, solid, pallid, strigose at the base.

Agaricus (*Crepidotus*) *rubi*, Berk., Outl., p. 164, t. 9, f. 7; Cke., Hdbk., p. 190; Cke., Illustr., pl. 515B.

On dead bramble, &c. Gregarious.

Crepidotus epigaeus. Pers.

Pileus ½–1 in. across, flesh very thin, reniform or flabellate, fragile, reddish-grey, base villous, whitish; gills distinct, narrow, diverging, watery rufescent; spores pale cinnamon, broadly elliptical, 10 × 7 μ.

Agaricus epigaeus, Persoon, Syn., p. 484; Cke., Hdbk., p. 191; Cke., Illustr., pl. 516A.

Agaricus depluens, Batsch, fig. 122.

On the ground, especially on damp clay.

Spores oblong, ·0004 in. long, not irregular, and more or less angular, as in the plant usually referred to *Agaricus depluens*, as figured by Hoffmann, so that its affinities seem rather to be with *Crepidotus* than *Claudopus*. The present is exactly the plant of Batsch, and we think it better to leave the name with what has formerly been considered his species, and retain that of Persoon. The gills of *A. epigaeus* are no longer red when dry. (Berk. & Br.)

TUBARIA. W. G. Smith. (fig. 4, p. 3.)

Stem central, somewhat cartilaginous, hollow. Pileus thin, often almost membranaceous, frequently clothed with the remains of the floccose universal veil. Gills more or less decurrent, broadest behind, hence somewhat triangular; spores clear or dusky ferruginous.

Tubaria, W. G. Smith, Journ. Bot. (Seeman), 1870; Cke., Hdbk., p. 187.

The species are all small, and known amongst the Ochrosporae by the more or less decurrent, triangular gills. The genus corresponds in structure to *Eccilia* and *Omphalia*.

ANALYSIS OF THE SPECIES.

I. Genuini.

Spores ferruginous.

II. Phaeoti.

Spores ferruginous-brown.

I. GENUINI.

Tubaria cupularis. Bull.

Pileus up to 1 in. across, rather fleshy, plano-depressed, obtuse, even, glabrous, rufescent then yellow, hygrophanous; stem 2–3 in. long, naked, even, very slightly attenuated upwards, whitish, hollow; gills slightly decurrent, narrow, crowded, dingy cinnamon; spores elliptical, rusty, 6 × 3 μ.

Agaricus cupularis, Bull., t. 554, f. 2; Cke., Hdb., p. 187; Cke., Illustr., pl. 602.

Amongst grass, &c.

With the habit of *Omphalia*, but with ferruginous spores. Cooke's figure, which is considered as a variety of the present species, has a tawny stem.

Tubaria furfuracea. Pers.

Pileus ⅓–2 in. across, rather fleshy, convex then plane, at length depressed and umbilicate, hygrophanous, yellowish-cinnamon, paler when dry; hoary and silky-squamulose, especially near the margin from the veil: stem 1–1¾ in. long, 1–2 lines thick, rigid, usually paler than the stem, minutely flocculose, base with white down, hollow; gills adnato-decurrent, rather distant, 1½ line broad, cinnamon; spores elliptical, 10 × 6 μ.

Agaricus furfuraceus, Persoon, Syn., p. 454; Cke., Hdbk., p. 187; Cke., Illustr., pl. 603.

On twigs, chips, &c.

Distinguished amongst its allies by the minutely furfuraceous pileus.

Var. **trigonophyllus**, Fries, Hym. Eur., p. 273; Cke., Hdbk., p. 187; Cke., Illustr., pl. 483.

Smaller than the typical form, becoming pale yellowish; gills 2½ lines broad, subdecurrent, triangular, distant, rather tawny-ochraceous.

On the ground, &c.

Var. **heterostichus**, Fries, Hym. Eur., p. 187.

Pileus depressed but rather umbonate, cinnamon, pale ochraceous when dry.

On the ground, &c.

Tubaria paludosa. Fr.

Pileus ¼–¾ in. across, submembranaceous, conical then convex, papillately umbonate, not striate, silky with superficial pale fibrils, yellowish-brown, sometimes with a tinge of pink; gills slightly decurrent, very broad behind, crowded, watery ochraceous, thin; stem 3–4 in. long, about 1 line thick, flexuous, equal, flocculose, ochraceous, hollow; spores ochraceous, elliptical, $10 \times 4\ \mu$.

Agaricus paludosus, Fries, Monogr., i. p. 397; Cke., Hdbk., p. 187; Cke., Illustr., pl. 484 (gills, stem, and spores primrose yellow).

In swamps, amongst sphagnum, &c.

Differing from the typical generic character in the papillose pileus, but in the typical form, *stygia*, the gills are truly decurrent. There is another form, *A. paludosus*, Fr., Epicr., p. 209, having the pileus brownish honey-colour, stem about 1½ in. long, gills not decurrent; growing in dried-up swamps. (Fries.)

Pileus submembranaceous, campanulate then convex, acutely umbonate, hygrophanous, without striae, silky, everywhere with persistent white hairs; stem fistulose, twisted, encircled with the remains of the white veil; gills adnate, plane, ovate, pale honey-colour. (Cooke.)

Tubaria stagnina. Fr.

Pileus $\frac{1}{2}$–1 in. across, somewhat membranaceous, conical then convex, obtuse, sometimes depressed and umbilicate, rather viscid and slightly striate when moist, rusty-bay, even and somewhat ochraceous when dry, ornamented with concentric white floccose squamules towards the margin; gills slightly decurrent, broad, triangular, ferruginous; stem 4–7 in. long, equal, rather tough, 1 line thick or a little more, reddish then bay, base with white, villous down, apex rather mealy, hollow; spores elliptical, dingy ferruginous, $10 \times 5\ \mu$.

Agaricus stagninus, Fries, Syst. Myc., i. p. 268; Cke., Hdbk., p. 187; Cke., Illustr., pl. 468.

In swamps, amongst sphagnum.

There is a slender form differing in the darker colour, smaller, often naked pileus, and narrower gills, figured by Fries, Icon., t. 129, f. 2.

Tubaria pellucida. Bull.

Pileus $\frac{1}{2}$–$\frac{2}{3}$ in. across, rather membranaceous, conical then campanulate, umbonate, hygrophanous, cinnamon, silky and squamulose towards the striate margin, pale when dry; gills broad behind and slightly decurrent, triangular, pale cinnamon; stem 1–1$\frac{1}{2}$ in. long, scarcely 1 line thick, slightly thickened at the base, pale, shining, apex mealy, hollow.

Agaricus pellucidus, Bulliard, Champ., tab. 550, f. 2; Cke., Hdbk., p. 188.

Amongst leaves, &c.

Allied to *Tubaria stagnina*, but much shorter in the stem, which is at first stuffed, then hollow. Although the pileus is not depressed, the gills indicate the genus *Tubaria*. (Fries.)

Tubaria muscorum. Pers.

Pileus up to $\frac{1}{2}$ in. across, membranaceous, convex, centre depressed, striate, glabrous, yellow-brown; gills slightly decurrent, horizontal, paler; stem hollow, short, base incrassated, coloured like the pileus.

Agaricus muscorum, Pers., Syn., p. 470; Hoffm., Nomencl., t. 5, f. 3; Fr., Hym. Eur., p. 274.

Amongst moss on the trunks of trees.

The fungus figured by Cooke, Illustr., pl. 1175B, as representing the present species, cannot, I think, be correct; for this mistake I am responsible. The species figured is evidently a *Galera*, probably a large form of *G. sphagnorum*.

Tubaria embolus. Fr.

Pileus ½–¾ in. across, membranaceous, campanulate then convex, obtuse, finely striate, glabrous, hygrophanous, yellowish-tawny, shining, ochraceous when dry; gills very broad behind, slightly decurrent, thick, triangular, very distant, cinnamon; stem 1½–2 in. long, thickened upwards, often curved, glabrous, tawny-yellow, shining yellow when dry, imperfectly hollow.

Agaricus embolus, Fries, Epicr., p. 206; Cke., Hdbk., p. 188; Cke., Illustr., pl. 514A.

On damp, heathy ground, &c.

Resembling *Omphalia umbellifera* in size and in the structure and arrangement of the gills. Known by the finely striate, glabrous pileus, and the stem evidently thickened upwards.

Tubaria autochthona. B. & Br.

Pileus ¼–½ in. across, obtuse, hemispherical, ochraceous-white, silky, margin flocculose, flesh thin; gills adnate with a decurrent tooth, horizontal, honey-colour; stem ¾–1 in. long, flexuous or curved, incrassated above and below, base whitish, woolly; spores elliptical, $8 \times 4\ \mu$.

Agaricus (*Nancoria*) *autochthonus*, Berk. and Broome, Ann. Nat. Hist., n. 1121 (1866).

Agaricus (*Tubaria*) *autochthonus*, Cke., Hdbk., p. 188; Cke., Illustr., pl. 514B.

On naked soil.

Pileus ¼ in. across; stem ¾ in. high, not half a line thick in the centre; spores paler than in *Tubaria furfuracea*, ·00019 in. long; it does not become pallid in drying, like that species, but is of an ochraceous white from the first. It is probably a very common species. (Berk. & Broome.)

II. PHAEOTI.

Tubaria crobula. Fr.

Pileus $\frac{1}{2}$–$\frac{3}{4}$ in. across, slightly fleshy, convex then plane, obtuse, slightly viscid, not striate, covered at first with white, floccose scales, then naked and hoary-tan; gills slightly decurrent, 1–1$\frac{1}{2}$ line broad, crowded, brownish-ferruginous; stem $\frac{2}{3}$–1$\frac{1}{2}$ in. long, 1–1$\frac{1}{2}$ line thick, often incurved or flexuous, brownish, covered with white, floccose scales, hollow; spores elliptical, brown-rust colour. 10 × 6 μ.

Agaricus crobulus, Fr., Epicr., p. 299; Cke., Hdbk., p. 188; Cke., Illustr., pl. 496B.

Amongst sticks, &c.

Distinguished from *Tubaria inquilina* by its larger size, and by the moderately persistent ring.

Tubaria inquilina. Fr.

Pileus $\frac{1}{2}$–$\frac{2}{3}$ in. across, membranaceous, convex then plane, at length more or less umbonate, hygrophanous, glabrous, slightly viscid, striate when moist, livid brown, tawny or hoary-tan when dry; gills slightly decurrent, very broad behind, triangular, rather distant, brownish-tan, then umber; stem about 1 in. long, scarcely 1 line thick, thinner towards the base, tough, bay, covered at first with white fibrils, and with white down at the base, hollow, often flexuous; spores elliptical, dusky ferruginous, 8 × 4 μ.

Agaricus inquilinus, Fries, Syst. Myc., i. p. 264; Cke., Hdbk., p. 189; Cke., Illustr., pl. 497.

On twigs, chips, &c.

Closely allied to *Tubaria crobulus*, smaller, pileus striate when moist, glabrous from the first, and stem soon glabrous are the principal distinctive features.

Var. **ecbolus**, Fries, Hym. Eur., p. 275.

Stem rooting, equal; gills crowded, ferruginous.

On roots of grasses.

FLAMMULA. Fries. (fig. 15, p. 3.)

Pileus fleshy, margin at first involute; stem central, flesh fibrous, not mealy at the apex; gills decurrent, or adnate

but not sinuate, usually entire; veil fibrillose, not interwoven, or altogether absent, never forming a distinct ring on the stem; spores ferruginous or brownish-ferruginous.

Flammula, Fries, Syst. Myc., i. p. 250; Cke., Hdbk., p. 166.

Closely allied to *Pholiota*, in fact the only difference between the two genera depends on the relative development of the partial veil, which in the present genus is fibrillose, and consequently does not form a persistent, spreading ring on the stem, whereas in *Pholiota* the veil is interwoven, and remains as a distinct ring on the stem.

Very few species are terrestrial, the majority growing on wood. The colours are often bright, orange-brown or yellow being most general.

ANALYSIS OF THE SPECIES.

I. Gymnoti.—Veil absent; pileus dry, often squamulose. Spores ferruginous.

II. Lubrici.—Pileus covered with a continuous, viscid, glabrous, partly separable cuticle; veil evident, fibrillose. Spores ferruginous, not tawny, ultimately brownish-ferruginous.

Gregarious, growing on the ground, rarely on wood. Corresponds to *Hebeloma*, but distinguished by the gills not being sinuate, apex of stem not mealy, pellicle more viscid and more readily separable, smell, &c.

III. Udi.—Cuticle of the pileus continuous, not separable, glabrous (superficially downy), moist or rather viscid in rainy weather. Veil evident, appendiculate. Spores not tawny nor ochraceous.

Allied to *Pholiota*; caespitose, growing on wood.

IV. Sapinei.—Pileus scarcely pelliculose (flesh splitting or becoming torn at the surface into squamules), not viscid. Veil silky, adpressed on the stem, not appendiculate, almost absent or forming a silky zone round the stem. Known more especially by the yellow, or yellow then tawny-colour of the gills and the tawny-ochraceous spores.

Subcaespitose, growing on conifers, but also commonly on the ground amongst fallen twigs, &c., of pines.

V. SERICELLI.—Cortinate, cuticle of pileus silky, dry, or at first viscid.

* GYMNOTI.

Flammula gymnopodia. Bull.

Ferruginous-brown, pileus 2–3 in. across, *flesh thin*, white, campanulato-convex, squamulose; gills very decurrent, arcuate, crowded, yellowish then ferruginous; stem 1½–2½ in. long, ½ in. thick, almost smooth, often incurved, solid.

Agaricus (*Flammula*) *gymnopodius*, Bull. t. 601, f. 1; Cke., Hdbk., p. 166; Cke., Illustr., pl. 431.

On the ground and on pine sawdust, &c. Often caespitose, stem ascending, sometimes partly hollow with age; pileus sometimes rusty-yellow, especially towards the margin. A very distinct species.

Flammula Aldridgei. Mass.

Pileus 1–2 in. across, convex then infundibuliform with a somewhat involute margin, dry, brick-red with a tinge of orange, or altogether tawny-orange, minutely velvety; gills deeply decurrent, rather crowded, 1½ line broad, lanceolate, golden-yellow then ferruginous-orange; stem 3–4 in. long, by ¼–⅓ in. thick, equal, flexuous, smooth, coloured like the pileus, smooth, with a white floccose mycelium at the base, hollow; spores elliptical, slightly apiculate at the base, ferruginous-orange, 16 × 5 μ.

Agaricus (*Flammula*) *Aldridgei*, Mass., Grev., vol. xx. p. 25 (1891).

On the ground in woods, amongst moss. Gregarious. A very distinct and beautiful species, readily known by the minutely velvety pileus and deeply decurrent gills.

Flammula vinosa. Bull.

Pileus ⅔–1½ in. across, very fleshy, thick, white; convex then expanded, at length often depressed, and flexuous at the margin, dry, minutely flocculose, obscure rusty-cinnamon, usually with a tinge of purple; gills crowded, decurrent, simple, narrow, yellowish then ferruginous; spores elliptical,

pale umber, 5 × 3 μ; stem about 1 in. long, 3 lines thick, thickened at the base or equal, pale, delicately flocculose, solid.

Agaricus (Flammula) vinosus, Bull., Champ., t. 54; Cke., Hdbk., p. 166; Cke., Illustr., pl. 437.

On the ground. Flesh of pileus very thick at the centre, very thin at the margin, gills very decurrent. Bearing a general resemblance to *Flammula paradoxa*; the latter, however, is recognised by the yellow gills and larger spores, and by the stem being usually thickened at the base.

Flammula floccifera. B. & Br.

Caespitose. Pileus 2 in. across, convex, expanded, tawny, somewhat zoned in drying, sprinkled with white fibrils, rather fleshy: flesh tawny at the edge and beneath the cuticle, elsewhere white; gills moderately broad, rounded behind, adnate, scarcely ventricose, wrinkled transversely, ferruginous, edge white; stem 1½ in. high, ¼ in. thick, attenuated downwards, furfuraceous within the pileus, white, with silky scales, hollow, umber within, ring none; spores ferruginous.

Agaricus (Flammula) floccifer, B. & Br., Ann. Nat. Hist., n. 909, pl. 14, f. 1; Cke., Hdbk., p. 167; Cke., Illustr., t. 438A.

On stumps of lime. Resembling *Hypholoma velutinus* in habit.

Flammula decipiens. Smith.

Pileus about 1 in. across, deep clear brown, becoming pale and the centre almost white, convex, sometimes very obtuse, at others umbonate and with a depression round the umbo, dry, minutely squamulose, flesh thick, golden-yellow; gills decurrent, crowded, 2 lines broad, orange-brown; stem about 1½ in. long, 2–3 lines thick, attenuated downwards, rich tawny, striate, often twisted; spores orange-brown, elliptical, apiculate at the base, 6–7 × 4 μ.

Agaricus (Flammula) decipiens, W. G. Smith, Journ. Bot. 1869, t. 95, f. 5–8; Cke. Hdbk., p. 167; Cke., Illustr., pl. 438B.

On burnt earth, charcoal, &c.

Inclined to be fasciculate, ring absent. Flesh of stem brown at the base. Superficially closely resembling *Flammula*

carbonaria, but quite distinct in the decurrent, bright-coloured gills.

Flammula clitopila. Cke. & Sm.

Pileus 1–1¾ in. across, rather fleshy, convex then expanded, disc depressed and umbilicate, smooth, dry, purplish-brown (madder brown); gills slightly adnexed, ventricose, scarcely crowded, dingy yellowish; stem 2 in. long, ⅓ in. thick in the middle, erect, ventricose, smoky-brown, with a few scattered fibrils towards the base, hollow, brown within; spores brown, elliptical, 10 × 4 μ.

Agaricus (*Flammula*) *cliptopilus*, Cke. & W. G. Smith, Grev., xiii. p. 59; Cke., Hdbk., p. 167; Cke., Illustr., pl. 500.

On the ground under firs.

Pileus 2 in., stem 2½–3 in. thick in the middle. Allied to *Ag. Weinmanni*, Fries, of which it may possibly be a variety, but differing in the pileus not being virgate, in the ventricose, hollow stem, and in the gills not being decurrent. (Cooke.)

** LUBRICI.

Flammula lenta. Pers.

Pileus 2–3 in. across, fleshy, convex, obtuse then almost plane, even, viscid, at first with minute, scattered squamules, whitish, pale clay-colour, or livid; gills adnate, whitish then clay-colour, crowded, 1–2 lines broad, becoming discoloured with the ferruginous spores; stem 2–3 in. long, 2–3 lines thick, subequal, often viscid, with white reflexed squamules, tough, somewhat stuffed; spores elliptical, 6–8 × 4 μ.

Agaricus (*Flammula*) *lentus*, Pers., Syn., p. 257; Cke., Hdk., p. 167; Cke., Illustr., pl. 439! 440?

On the ground, rarely on wood, in mixed woods. Very glutinous in wet weather. Altogether whitish, or varying to pale clay colour.

I suspect this and *A.* (*Hebeloma*) *glutinosus* are one species. On examining the spores of a large number of specimens, growing at the same time within a limited area, I find the spores shading from the clay-colour of *Hebeloma* to the brighter colour of *Flammula*. The gills were also very sinuato-adnexed in younger specimens, and decurrent with a tooth when older. (Stev.)

Flammula lubrica. Fr.

Pileus 2–4 in. across, convex, obtuse, becoming expanded and almost flat, sometimes depressed and wavy, even, viscid, tawny-red or bright cinnamon, flesh white, thin at the margin; gills adnate, rather decurrent, crowded, 3 lines broad, pale then dingy clay-colour; stem 2–5 in. long, 3–4 lines thick, equal or slightly thinner upwards, fibrillose, whitish, brownish with age, base pubescent, apex striate, solid; spores pale rusty-brown, elliptical, 8 × 4 μ.

Agaricus (Flammula) lubricus, Fries, Syst. Myc., i. p. 252; Cke., Hdbk., p. 168.

On or near trunks.

Allied to *Flammula lenta*, but usually larger, pileus cinnamon or tawny, sometimes pallid, disc tawny, spotted with squamules. Flesh white, almost scentless. (Fries.)

Flammula lupina. Fr.

Pileus 3–4 in across, convex then flattened and sometimes more or less depressed, even, viscid; gills adnato-decurrent, rather crowded, broad, pallid, then clay-colour; stem about 1 in. long, ½ in. thick, firm, unequal, with adpressed fibrils tinged tawny, apex white.

Agaricus (Flammula) lupinus, Fries, Epicr., p. 185; Cke., Hdbk., p. 168.

Amongst grass.

Stem sometimes thickened at the apex, at other times at the base, ½ in. thick. Pileus 3–4 in. broad, with a readily separable pellicle, but not so glutinous as in some species. Flesh soft, white. There are two forms:—(*a*) smell very strong and pungent, pileus brown or fuscous-tan, then clay-colour, stem rather ferruginous; (*b*) smell milder, pileus tawny, stem and gills yellowish. (Fries.)

Flammula mixta. Fr.

Pileus 1–2 in. across, convexo-plane, obtuse, viscid, dingy tan-colour, disc darker and rugulose, margin paler, smooth, even; gills rather decurrent, crowded, 3–4 lines broad, margin uneven, whitish then clay-colour; stem variable, 1–3 in. long, 3–5 lines thick, tough, equal, curved, covered upwards with brown fibrils, and with rufous squamules at the base; spores elliptical, yellow-brown, 10 × 5 μ.

Agaricus (*Flammula*) *mixtus*, Fries, Ed., i. p. 185; Cke., Hdbk., p. 168; Cke., Illustr., pl. 474.

On the ground, in pine woods more especially.

Inodorous. Flesh rather firm, watery. Stem 1–3 in. long, 3–4 lines thick, slightly wavy and a little thickened at the base. Pileus 1–2 in. broad, rufous tan, margin paler. superficially resembling *Hebeloma punctata*, but the general structure and habit is that of *Flammula lenta*, *F. lubricus*, &c.

Flammula juncina. W. G. Smith.

Pileus 1–1½ in. across, hemispherical, thin, rather expanded, even, glabrous, sulphur-yellow with a rich brown disc; gills decurrent, 2–3 lines broad, thin, sulphur-yellow then reddish-brown; stem 4 in. long, 3 lines thick at the apex, uniformly tapering downwards, clothed with a few fibres, bright sulphur-yellow, base tawny, solid.

Agaricus (*Flammula*) *juncinus*, W. G. Smith, Journ. Bot. (1873), p. 336; Cke., Hdbk., p. 168; Cke., Illustr., pl. 475.

On old dead rushes in an old clay-pit. Taste nauseous and disagreeable, somewhat bitter. (W. G. S.)

Flammula gummosa. Lasch.

Pileus 1–2½ in. across, campanulate, then becoming flattened, obtuse or slightly depressed, viscid, with a separable pellicle, even, sprinkled with superficial squamules, pale yellow or often greenish, at length with a rusty tinge, margin paler; flesh thick in the centre, thin at the margin, becoming yellow; gills adnate, crowded. narrow, yellowish-white then cinnamon; stem 2–3 in. long, 3–4 lines thick, equal, rigid, straight, or slightly incurved at the base, silky, fibrillose, pale above, base rusty-red, stuffed, hollow when old.

Agaricus (*Flammula*) *gummosus*, Lasch, Linnaea, 1827, No. 325; Cke., Hdbk., p. 168; Ck., Illustr., pl. 441.

On and about old stumps. Inodorous, not bitter. Pileus conical then depressed, pale yellow or greenish, margin paler, 1–2 in. broad. Flesh becoming yellow. (Fries.)

Flammula spumosa. Fr.

Pileus 1–2 in. across, convex then plane, sometimes rather umbonate, covered with a viscid, separable cuticle, naked (*i.e.* without squamules or fibrils), pale yellow, disc darker

and usually with a rufous tinge, even; flesh watery, pale yellowish-green; gills adnate, crowded, 1½ line broad, pale yellow, then ferruginous; stem 2–4 in. long, about 2 lines thick, subequal, more or less fibrillose, but with a distinct cuticle, pale yellow or the colour of the pileus, hollow; spores yellow-brown, elliptical, 9 × 5 μ.

Agaricus (*Flammula*) *spumosus*, Fries, Syst. Myc., i. p. 252; Cke., Hdbk., p. 169; Cke., Illustr., pl. 476.

In fir woods, on sawdust, &c.

In pine woods on the ground, very abundant, rare on trunks. Gregarious, more or less caespitose, inodorous, yellow, stem yellow or olive-brown, often attenuated downwards. Very viscid in wet weather.

Flammula carbonaria. Fr.

Pileus 1–2 in. across, fleshy, convex, then almost plane, thin, even, viscid, often depressed in the centre, margin inflexed, tawny-yellow, flesh rather firm, yellow; gills adnate, crowded, 2–3 lines broad, pale then brownish clay-colour; stem 1½–3 in. high, 2–3 lines thick at the apex, equal, or often attenuated downwards, rigid, pallid, base usually darker, fibrilloso-squamulose, imperfectly hollow; spores ferruginous-brown, elliptical, 7 × 3·5 μ.

Agaricus (*Flammula*) *carbonarius*, Fries, Syst. Myc., i. p. 252; Cke., Hdbk., p. 169; Cke., Illustr., pl. 442.

On burnt earth, charcoal, &c.

Sometimes with pileus 3 in. diam., and stem to 4 in. long; usually smaller. (Cooke.)

Gregarious, tough, 1 in. or a little more broad, pileus rather tawny, flesh yellow, spores ferruginous-brown. (Fries.)

The soil is often rolled together by the mycelium into a small bulb. The blackness at the base of the stem may be from its habitat. Densely gregarious; very much allied to *Flammula spumosa*, but very easily distinguished by the fusco-ferruginous spores. Its stature also is smaller, its structure tougher and lasting long, and its colours more intense. (Fr.)

*** UDI.

Flammula filia. Fr.

Pileus 2–3 in. across, rather fleshy, convex then plane, glabrous, moist in rainy weather, but not viscid, pale reddish-yellow, disc tawny; gills adnate, slightly arcuate, hence with a minute decurrent tooth, rather crowded, 3–4 lines broad, narrowest in front, whitish then pale tawny-yellow; stem 4–6 in. long, about ½ in. thick, equal or attenuated at the base, glabrous, pale yellow, flesh reddish, hollow; spores tawny-orange, elliptic-fusiform, 10 × 5 μ.

Agaricus (Flammula) filius, Fries, Icon. Sel., vol. xi. p. 16, pl. 117, fig. 1; Cke., Hdbk., p. 169; Cke., Illustr., pl. 432.

On the ground in woods.

Tall, elegant, inodorous. Stem hollow, 3–6 in. long, ½ in. thick, equal or attenuated at the base, glabrous, becoming pale, base and inside reddish. Veil fugacious, terminated by an incomplete ring. Pileus slightly fleshy, soon flattened, 2–3 in. broad, naked, even, glabrous, without a viscid pellicle, although becoming quite moist in rainy weather, gilvous, disc rufescent. Flesh of the pileus white, that of the stem reddish. (Fries.)

The figure in "Illustrations" has too yellow a tone, and is printed rather too dark in the pileus. (Cooke.)

Flammula fusus. Batsch.

Pileus 2–3½ in. across, fleshy, compact, convex, obtuse, becoming plane or a little depressed, even, smooth, rather viscid, reddish tan-colour, disc darker, flesh becoming yellowish, veil appendiculate; gills rather decurrent, 3–4 lines broad, pallid yellow then ferruginous; stem 2 in. long, about ½ in. thick at the apex, and gradually attenuated downwards into a rooting base, firm, fibrilloso-striate, pallid, base sometimes dark, stuffed; spores rusty-brown, elliptical, 10 × 4 μ.

Agaricus fusus, Batsch, f. 189; Fries, Hym. Eur., p. 247; Cke., Hdbk., p. 169; Cke., Illustr., pl. 433.

Agaricus pomposus, Bolton, t. 5.

On fallen wood and on the ground.

Solitary or caespitose. Smell not pungent, taste mild. The colour of the gills is variable, greyish-green, &c.

The root consists of a hard and pointed termination of the stem, covered with downy fibres, of a white-grey colour; it has no volva.

The stem is three or four inches high, largest above, tapering towards the root, often bent irregularly, of a pale yellow above, brown near the root, and easily divides in yellow silky filaments.

The curtain is a pale yellow colour, breaks like a fine and delicate spider's web, of the finest silky down. It quite vanishes before the decay of the plant.

The gills in three series, narrow, thin, numerous, and delicate; while young of a pale yellow, afterwards changing to a greenish-olive colour. They adhere to the stem by a narrow claw.

The pileus two or three inches in diameter, deflected round the margin, where it is of a yellow colour, gradually changing to a fine orange, as it approaches the centre, which is a deep orange or scarlet colour. The flesh thick, brittle, and of a pale yellow.

Grows in woods about Halifax; frequent in September and October. (Bolton.)

Var. **superba**, Mass. Pileus 4–5 in. across, convex, obtuse then expanded, even, glabrous, bright deep orange, disc darker; flesh thin, with a reddish tinge; stem 4–5 in. long, ¾ in. or more thick at the apex, even, equal, attenuated near the base, rooting, even, pale orange, stuffed; gills decurrent, crowded, narrow, bright yellow.

Agaricus (Flammula) fusus, Batsch; variety; Cke., Illustr., pl. 434.

On the ground.

Flammula astragalina. Fr.

Pileus 1–2½ in. across, fleshy, convex then flattened, obtuse, often flexuous, rather moist in rainy weather, but not viscid, even, smooth, but when young silky round the margin with the very thin, superficial, silky veil, orange-saffron, disc deepest, margin pale; gills adnate, crowded, 2–3 lines broad, pale yellow, then somewhat ferruginous, margin flocculose when young, flesh firm, black when bruised; stem 1½–4 in. long, 2–4 lines thick, equal or attenuated downwards, often flexuous, pale yellow or tinged with red, base not much if

not pulverulent, but covered with the copious ferruginous spores. Stem whitish-yellow, not becoming ferruginous, not rooting, equal or attenuated at the base. Pileus yellowish clay-colour, rather viscid. (Fries.)

Cooke's figure differs in the very bright gills and stem ferruginous below.

Flammula inopoda. Fr.

Pileus 1–4 in. across, convex then becoming almost plane, obtuse, even, smooth, slightly viscid when moist, honey-coloured tan, or with a reddish tinge, paler round the margin, becoming pale; flesh thin, coloured like the pileus, white when dry; gills adnate, thin, crowded, about 2 lines broad, yellowish-white, sometimes with a tinge of green; stem 3–6 long, 1–3 lines thick, flexuous, equal, rooting, adpressedly fibrillose, pale above, reddish-brown below, hollow; spores broadly elliptical, ferruginous-brown, 10 × 6 μ.

Agaricus (*Flammula*) *inopus*, Fries, Syst. Myc., i. p. 251; Cke., Hdbk., p. 171; Cke., Illustr., pl. 446.

On pine trunks.

Caespitose or gregarious; pileus rather viscid in moist weather, honey-clay-colour, becoming pale, margin paler; flesh similarly coloured, white when dry. Gills sometimes with a pallid greenish tinge, but dry; spores scanty, dingy ferruginous. (Fries.)

Distinguished by the long, tapering, rooting base of the stem.

Flammula apicrea. Fr.

Pileus 1½–3 in. across, convex then expanded and almost plane, flesh thin, yellow, even, glabrous, moist, dingy orange, disc darker, margin often splitting; gills adnate, crowded, thin, 2 lines broad, shining ferruginous; stem 2–3 in. long, 2–3 lines thick, equal, not rooting, pallid, fibrillose, ferruginous downwards as are also the fibrils, hollow, flesh yellow; spores ferruginous, elliptical, 7 × 3 μ.

Agaricus (*Flammula*) *apicrea*, Fries, Epicr., p. 188; Cke., Hdbk., p. 171; Cke., Illustr., pl. 436.

On rotten trunks. Rather caespitose.

Very similar to *Flammula alnicola*, but the colour of the gills almost unchangeable, flesh hygrophanous, pileus clay-colour, disc fulvous, becoming pale, smell sweet. (Fries.)

**** SAPINEI.

Flammula hybrida. Fr.

Pileus about 2 in. across, hemispherical then expanded, margin involute, obtuse, regular and symmetrical, glabrous, even, moist, tawny-cinnamon then rich tawny-orange, flesh thin, tawny; gills adnate, rather crowded, 2 lines broad, yellowish then tawny-ferruginous; stem 2–3 in. long, 3–4 lines thick, usually attenuated upwards, villose then silky, rather striate; stuffed then hollow, whitish with silky down, but tawny-orange when the down disappears; ring present as an annular zone near the apex of the stem, white; spores elliptical, tawny-ochraceous, 7–8 × 4–5 μ.

Agaricus hybridus, Fries, Obs., ii. p. 30; Cke., Hdbk., p. 171; Cke., Illustr., pl. 615.

On stumps and on the ground amongst fragments of wood, &c.

Stem hollow, base white and downy. Pileus regular, disc compact, at first cinnamon-fulvous, then golden-fulvous, flesh pallid. Spores as in *Flammula penetrans*, ochraceous. (Fries.)

Flammula sapinea. Fr.

Pileus 1–3 in. across, fleshy, compact, hemispherical then expanded, very obtuse, slightly flocculoso-squamulose then usually cracked into minute scales, dry, tawny-orange, paler towards the margin; gills adnate, crowded, 2 lines broad, plane, yellow then tawny-cinnamon; stem 1–2 in. high, up to ½ in. thick, solid or hollow, but stout and often irregular, conspicuously fleshy fibrous, not corticated, rooting, yellowish turning brownish when bruised; spores yellowish, elliptical, 8 × 5 μ.

Agaricus (Flammula) sapineus, Fries, Syst. Myc., i. p. 239; Cke., Hdbk., p. 171; Cke., Illustr., pl. 447? (If the right plant, a very remarkable var., umbonate, stem thin, &c.)

On pine woods.

Subcaespitose. Stem usually short, solid or hollow, brownish when bruised, often compressed, lacunose, &c. Pileus 1–4 in. across, disc subopaque, margin shining, paler. Flesh thick, but soft and not splitting, yellowish. Smell strong. The yellowish veil scarcely evident. (Fries.)

Var. **terrestris.** Caespitose, stem fusiformly rooting, elongated.

Fries, Hym. Eur., p. 251.

Flammula liquiritiae. Pers.

Pileus 1–3 in. across, flesh thin, splitting, yellow, convex then becoming expanded and almost plane, rather umbonate, glabrous, moist, margin at length finely striate, bay-brown or tawny-orange, becoming pale; gills obtusely adnate, rounded behind, 3 lines broad, golden-yellow then tawny-cinnamon, not spotted; stem about 2 in. long and 2–3 lines thick, attenuated upwards, often unequal and curved, fibrous, striate, at first covered with white silkiness, tawny-ferruginous, hollow, tawny-yellow within; veil absent.

Agaricus liquiritiae, Pers., Syn., p. 306; Fries, Hym. Eur., p. 251; Cke., Hdbk., p. 172.

On fir trunks.

Taste sweet, like that of liquorice. (Berk.)

Subcaespitose. Stem 2 in. long, 2–3 lines thick, not pruinose nor with a trace of ring, base thickened, villous, tawny-yellow within, pileus 1–3 broad, golden or orange-tawny, at length flaccid, flesh thin, yellow. Smell acid. (Fries.)

Flammula picrea. Fr.

Pileus about 1 in. across, flesh thin, yellowish, splitting, convex then expanded, obtuse, even, glabrous, tawny-bay or brownish-cinnamon, when old pale and tawny, moist in rainy weather; gills adnate then more or less seceding, crowded, 1½ line broad, yellowish then ferruginous; stem 2–3 long, about 2 lines thick, slightly thinner upwards, straight, not corticated, pale umber, at first mealy, hollow; veil absent; spores elliptical, yellowish, 8–10 × 5–6 μ.

Agaricus (*Flammula*) *picreus*, Fries, Syst. Myc., i. p. 239; Cke., Hdbk., p. 172; Cke., Illustr., pl. 448.

On pine stumps, deal boards, &c.

Subcaespitose. Stem easily compressed, sometimes silky and pale, but darker when bruised. Pileus when moist rufous or bay-cinnamon, becoming pale, tawny, &c., half an inch across, flesh same colour. Gills sometimes almost decurrent. Varies with the pileus campanulate, stem slender, straight, equal; also pileus cracked into papillae, disc rather squamulose. (Fries.)

Flammula nitens. Cke. & Mass.

Caespitose. Pileus 1–1½ in. across, hemispherical, obtuse, shining, dry, somewhat silky, dark purple-brown, not becoming pale; gills adnate, crowded, 2–3 lines broad, margin entire, pallid then umber; stem 2–3 in. long, 4–5 lines thick, equal, fibrillose, incurved, pale pinkish-brown, solid; spores almond-shaped, 10 × 5–6 μ.

Agaricus (Flammula) nitens, Cooke & Massee, Grev., vol. xviii. p. 52; Cke., Hdbk., p. 375; Cke., Illustr. Suppl., pl. 1154.

On the ground. Caespitose. Readily known by the distinct colour of the pileus and the stout, solid stem.

***** SERICELLI.

Flammula ochrochlora. Fr.

Pileus 1–2 in. across, fleshy, convex then expanded, obtusely umbonate, dry, silky, minutely squamulose, greenish straw-colour then pallid; flesh white then greenish; gills adnate, crowded, 1–1½ lines broad, whitish then green, at length olive; stem 2 in. long, 2–3 lines thick, hollow, attenuated upwards, often curved and flexuous, scaly and also with whitish flocci, thin, within and at the base, ferruginous; veil evident in the young stage (of the *Hypholoma* type), white; spores elliptical, clear, ferruginous, 8 × 4 μ.

Agaricus (Flammula) ochrochlorus, Fries, Monogr., ii. p. 301; Fries, Hym. Eur., p. 252; Cke., Hdbk., p. 172; Cke., Illustr., pl. 616.

On old trunks, furze roots, &c.

Caespitose. Stature and habit of *Hypholoma fascicularis*, but distinguished by the clear ferruginous spores. (Fries.)

Flammula helomorpha. Fr.

Pileus ½–1 in. across, rather fleshy, convex then expanded, unequal, gibbous, viscid, dry, minutely silky, margin thin, unequal, incurved, white; gills adnato-decurrent, crowded, 1–1½ line broad, white then tan-colour; stem 1 in. long, 2 lines thick, unequal, curved, ascending, even, almost glabrous, whitish, solid; veil absent; spores elliptical, tan-colour, 10 × 6 μ.

Agaricus (Flammula) helomorphus, Fries, Epicr., p. 184; Cke., Hdbk., p. 172; Cke., Illustr., pl. 449A.

On the ground in pine woods, &c.

Scattered. Pileus often obtusely umbonate, stem sometimes slightly thinner downwards, rather silky above under a lens; distinguished by its small size and white colour. *Flammula scamba*, its nearest ally, is known by the flocculose stem which eventually becomes tinged with tawny.

Flammula scamba. Fr.

Pileus ¾–1½ in. across, rather fleshy, convex then plane and more or less depressed, viscid in wet weather, floccosely villose, dingy white; gills adnato-decurrent, crowded, somewhat wavy, 2 lines broad, pale yellowish clay-colour; stem 1–1½ in. long, 1 line or more thick, incurved, flocculose, white, usually thinner downwards, partly stuffed; spores elliptical, yellowish, 10–12 × 5–6 μ.

Agaricus (Flammula) scambus, Fries, Obs., ii. p. 45; Cke., Hdbk., p. 172; Cke., Illustr., pl. 449B.

In pine woods, on larch and on the ground.

Gregarious, tough, variable in form, pileus sometimes convex and umbonate, stem becoming ferruginous downwards, and the pileus tinged pale dingy ochraceous.

Flammula filicea. Cooke.

Pileus ⅔–1½ in. across, flesh thin, convex then plane or slightly depressed, minutely squamuloso-fibrillose, deep yellow, tawny-orange in the centre; gills adnate, crowded, about 1½ line broad, sulphur-yellow, at length tawny cinnamon; stem 1½–2 in. long, 1½ line thick, equal, even, almost smooth, sulphur-yellow, base often tawny, hollow; veil adhering to the stem and the margin of the pileus in reddish, fugacious fragments.

Agaricus (Flammula) filiceus, Cke., Seem., Journ. Bot. (1863), p. 66, t. 3, f. 1; Cke., Hdbk., p. 173; Cke., Illustr., pl. 450.

On old tree-fern stems. In all probability an introduced species. Remarkable for the sulphur-yellow colour of every part, flesh also.

Flammula purpurata. Cke. & Mass. (fig. 15, p. 3.)

Pileus 1–2 in. across, fleshy, convex then expanded, ob-

tusely umbonate, purple or purple-brown, clad with minute, persistent small squamules of the same colour, dry, not becoming pale; gills adnate, somewhat rounded behind, not crowded, lemon-yellow, at length bright ferruginous, narrow; stem 1–2 in. long, curved, ascending, equal, smooth and pallid above, purplish and granulose downwards, solid, flesh yellow towards the apex, purplish below; ring imperfect, fibrillose; spores elliptical, ferruginous, 8 × 5 μ.

Agaricus (*Flammula*) *purpuratus*, Cooke & Massee, Grev., vol. xviii. p. 73; Cke., Hdbk., p. 375; Cke., Illustr., pl. 964.

On tree-fern stems.

Taste very bitter. Flesh of pileus thick, tinged with purple. Probably an imported species.

GALERA. Fries. (figs. 5, 6, p. 3.)

Pileus more or less membranaceous, conical or oval then expanded, striate, margin at first straight and adpressed to the stem; stem central, somewhat cartilaginous, tubular; gills adnate or slightly adnexed and becoming almost free, sometimes with a slight decurrent tooth, but never truly decurrent; spores elliptical, smooth, tawny-ochraceous.

Galera, Fries, Syst. Myc., i. p. 264 (as a subgenus of *Agaricus*); Cke., Hdbk., p. 183.

The genus is most nearly allied to *Naucoria*, but distinguished by the thin, striate pileus, having the margin straight and adpressed to the stem when young. Mostly slender, small, and fragile.

A remarkably natural group. Corresponding to *Mycena* and *Nolanea*, but readily distinguished by the rusty-ochraceous spores. From other groups of the Dermini (Ochrosporae), distinguished by the hollow, cartilaginous stem, and the more or less campanulate pileus having the margin straight and adpressed to the stem at first. Veil evident in some species, but fugacious, fibrillose, in others quite absent. Species not very numerous, generally autumnal, for the most part terrestrial, slender, fragile. (Fries.)

ANALYSIS OF THE SPECIES.

† CONOCEPHALI.

Pileus conico-campanulate, hygrophanous, almost even, atomate when dry; stem straight; gills ascending, rather crowded; veil absent.

†† BRYOGENI.

Pileus membranaceous, campanulate, striate, glabrous, hygrophanous, even when dry, opaque, and somewhat silky; *stem slender, lax, not perfectly straight;* gills broad, adnate with a small decurrent tooth; slender, growing among moss; veil very fugacious.

††† ERIODERMEI.

Pileus submembranaceous, veil evident, superficial, disappearing, at first silky or squamulose, especially near the margin.

† CONOCEPHALI.

Galera lateritia. Fr.

Pileus 1 in. or more high, somewhat cylindrical then campanulate or conical, obtuse, hygrophanous, pale yellowish and the margin faintly striate, even and whitish ochre when dry, membranaceous; gills adnexed, nearly free, very narrow, crowded, tawny-ferruginous; stem 3–4 in. long, 1½ line thick, slightly thinner upwards, straight, fragile, whitish, frosted with white meal, hollow; spores 11–12 × 5–6 μ.

Agaricus (Galera) lateritius, Fries, Syst. Myc., i. p. 265; Cke., Hdbk., p. 183; Cke., Illustr., pl. 460.

In rich pastures, &c.

Allied to *G. ovalis*, but clearly distinguished by the narrow, ascending gills. Very fragile.

Galera tenera. Schaeff. figs. 5, 6, p. 3.)

Pileus ½–¾ in. high and broad, thin, conico-campanulate, obtuse, hygrophanous, entirely pale ferruginous when moist,

even, pale, and rather atomate when dry; gills adnate, crowded, ascending, rather broad, cinnamon; stem 3–4 in. long, 1–1½ line thick, fragile, equal or slightly thinner upwards, straight, rather shining, striate above, colours like the pileus; spores 12–13 × 7 μ.

Agaricus tener, Schaeff., t. 70, f. 6–8; Cke., Hdbk., p. 183; Cke., Illustr., pl. 461.

Amongst grass. Size very variable, all one colour when moist; the pileus is slightly striate when moist; even and pale, as is also the stem when dry. Differs from *G. lateritia* in the coloured stem and broad gills.

Var. **pillosella**, Pers. Pileus and stem covered with short, scattered pubescence when moist.

Cke., Illustr., pl. 461.

Galera siliginea. Fr.

Pileus about ⅓ in. across, globosely campanulate, then expanded, unequal, even, greyish, not becoming pale; gills adnate, narrow, rather crowded, ochraceous; stem rather wavy, equal, pallid, somewhat pruinose.

Agaricus (Galera) siligineus, Fries, Obs., ii. p. 168; Cke., Hdbk., p. 376 (excl. fig. quoted).

Under ferns, &c., in damp shady places. Stem fistulose, 2–3 in. long, 1 line thick, cylindrical, rather firm, yellow, not striate nor villose, but slightly powdered everywhere with white meal, stem sometimes fragile. Pileus membranaceous, campanulate then expanded and somewhat convex, striate, glabrous, dry, rather fragile; 3–4 lines high and broad, yellowish-ochre. Flesh very thin, coloured like the pileus. Gills rounded, adnexed, distinct, not distant, watery yellow. (Fries.)

The above is Fries' description in Obs., ii. p. 168, which does not quite agree with his later one in Hym. Eur., p. 267, where he says: Separated from all others by the pallid stem, not straight, and often attenuate at the base, pileus somewhat greyish, unusually convex, margin often flexuous.

Galera campanulata. Mass.

Pileus ½–¾ in. broad and high, persistently campanulate, subacute, even, hygrophanous, deep cinnamon when moist, slightly rugulose, almost white, and atomate when dry;

flesh thin, white when dry; gills adnate, rather crowded, about 1 line broad, tawny-cinnamon; stem about 2 in. long, not 1 line thick, equal or slightly incrassated at the base, flexuous, almost glabrous, even, pallid, base darker, whitish when dry, minutely hollow; spores elliptical, ends rather acute, 12 × 7 μ.

Agaricus (*Galera*) *siligineus*, Fries, in Cke., Illustr., pl. 1156.

Smell strong. Gregarious on road scrapings and in dry places by road sides, &c.

The pileus and stem become nearly or sometimes quite white when dry. Cooke at one time considered this species as a form of *Galera siliginea*, and figured it under this name, adding in the Hdbk., p. 376: The variety figured turns pale when dry, thus differing from the type.

Galera ovalis. Fr.

Pileus 1 in. high, 1–1½ in. *across*, almost membranaceous, ovate-campanulate, even, hygrophanous, ferruginous when moist, yellowish when dry; margin straight and adpressed to the stem; gills almost free, very ventricose, broad, crowded, ferruginous, somewhat deliquescent; stem 3–4 in. long, 1½ line thick, equal, straight, slightly striate, coloured like the pileus, hollow; spores elliptical, 10 × 6 μ.

Agaricus (*Galera*) *ovalis*, Fries, Syst. Myc., i. p. 389; Cke., Illustr., pl. 462: Cke., Hdbk., p. 184.

On dung and amongst grass.

Agreeing in colour with *G. tenera*, but larger in every part, and also differs in the partial veil, which, though very fugacious, often forms an imperfect ring in the young state. Distinguished from *G. lateritia* in the coloured stem.

Galera antipoda. Lasch.

Pileus ½–1 in. across, disc slightly prominent and fleshy, remainder thin, campanulate-convex, even, hygrophanous, deep ochraceous when moist, almost white and atomate when dry; gills almost free, narrowed behind, crowded, narrow, lanceolate, yellowish, ochraceous; stem about 1 in. long, straight, 1 line thick, rather bulbous at the base, and continued as a long tapering root, pale ochraceous, mealy, striate: spores elliptical, 15–16 × 8 μ.

Agaricus antipus, Lasch, n. 401; Cke., Hdbk., p. 184; Cke., Illustr., pl. 463A.

On dung and on the ground.

Readily known by the long, tapering rooting base of the stem.

Galera conferta. Bolton.

Densely crowded; pileus $\frac{1}{2}$–$\frac{3}{4}$ in. across, thin, conico-campanulate, striate, hygrophanous, fuscous when moist, ochraceous or whitish with the disc only coloured when dry; gills slightly adnexed, rather distant, 1 line or more broad, white, then pale ochraceous-brown; stem 1–2 in. long, up to 1 line thick, silky, shining, naked, whitish, with a long, equal, rooting base.

Agaricus confertus, Bolton, Fung. Halifax, p. 41, t. 41; (drawn in the dry stage); Cke., Hdbk., p. 181; Cke., Illustr., pl 463B. (Copied from Bolton.)

In stoves. Very much crowded and very fragile. Not seen since Bolton's time.

Galera spartea. Fr.

Pileus $\frac{1}{2}$–$\frac{2}{3}$ in. across, flesh very thin, campanulato-convex then expanded, obtuse, hygrophanous, watery ferruginous and pellucidly striate when moist, pale tan and even when dry; gills broadly adnate, crowded, plane, about 1 line broad, dark cinnamon; stem 1–2 in. long, scarcely 1 line thick, minutely hollow, smooth, polished, rigid, cinnamon above, darker below, straight.

Agaricus (*Galera*) *sparteus*, Fries, Syst. Myc., i. p. 266; Cke., Hdbk., p. 184; Cke., Illustr., pl. 481A.

Agaricus atro-rufus, Bolton, pl. 51, f. 1.

Amongst grass, moss, &c.

Very brittle, gregarious. Somewhat resembling *G. tenera*, but smaller, and having the pileus more expanded at maturity, and the stem, although straight, is flexile or inclined to form a very slight, long curve, but not flexuous, *i.e.*, with short repeated curves.

Galera pygmaeo-affinis. Fr.

Pileus 1–1$\frac{1}{2}$ in. across, almost membranaceous, campanulate then expanded, dry, not striate, but slightly corrugated in a reticulate manner, brownish or honey-coloured tan; gills slightly adnexed, almost free, crowded, thin, very narrow, margin quite entire, tan-colour when young, rusty-ochre

when adult; stem 2–3 in. long, 1 line thick, hollow, fragile, remarkably equal, white, apex slightly mealy when young; veil almost obsolete.

Agaricus (Galera) pygmaeo-affinis, Fries, Monogr., i. p. 389; Cke., Illustr., pl. 481B; Cke., Hdbk., p. 184.

Among grass, &c.

Allied to *G. ravida*, but distinct in the crowded gills, &c. Possibly a tall state of *Naucoria pygmaea*, with which it was at one time joined; but the general features are those of *Galera* rather than *Naucoria*. (Fries.)

†† BRYOGENI.

Galera vittaeformis. Fr.

Pileus ½–1 in. across, membranaceous, conical then hemispherical, obtuse, disc even, margin striate, glabrous, bay when moist; gills adnate, rather broad, somewhat ascending, rather distant, at first watery-cinnamon then ferruginous; stem 1½–3 in. long, up to 1 line thick, nearly straight, equal, glabrous or sometimes downy, minutely striate under a lens, opaque, reddish; veil hardly evident; spores elliptical, 12 × 6 μ.

Agaricus (Galera) vittaeformis, Fries, Epicr., p. 294; Cke., Hdbk., p. 185; Cke., Illustr., pl. 464A.

On the ground among grass, &c.

There is a smaller form having the pileus papillate, gills narrow, and stem paler. (Fries.)

Galera rubiginosa. Pers.

Pileus ¼–½ in. across, membranaceous, campanulate, obtuse, everywhere striate, glabrous, honey-colour when moist, even and pale tan when dry; gills adnate, ascending, rather broad, distant, ochraceous; stem about 2 in. long, very slender, tough, flaccid, glabrous, shining, bay or dark ferruginous, hollow; spores elliptical, 10 × 5 μ.

Agaricus (Galera) rubiginosus, Pers., Syn., p. 385; Cke., Hdbk., p. 185; Cke., Illustr., pl. 464B.

In pastures and woods, among moss, &c.

The stem is sometimes downy under a lens, and when growing among high moss becomes elongated and straighter. (Fries.)

n. Batsch.
across, membranaceous, campanulate
a papillate umbo, sometimes obtuse,
he disc, yellowish-ochre or watery-
when dry; gills adnate, broad, ven-
connected by veins, tawny-cinnamon,
n about 2 in. long, flexuous, glabrous
sometimes rigid, rather tawny, some-
itron or ochraceous, hollow; spores

Batsch, f. 26; Cke., Hdbk., p. 185;

variable.

Fries, Monogr., i. p. 394; Cke., Hdbk.,
pl. 465B.
he size of the typical form; stem
llose, tawny; pileus up to 1 in. across,

., Syn., p. 385; Cke., Hdbk., p. 185.
e, watery-cinnamon, pileus papillate.

a. Lasch.
high and ½ in. across, campanulate,
riate, yellowish-fuscous; gills adnate,
r distant, yellowish-ochre; stem 2–3
e thick, equal, slightly wavy, yellow,
ntly elliptical, 14 × 6 μ.
Lasch, n. 410; Cke., Hdbk., p. 186;

allied small species, fibrillose, disc of
tan-colour.

Quelet.
oss, very thin, campanulate, striate,
y tender; gills adnate, arcuate, as
tely crowded, yellowish then tan,

margin pale; stem ½–¾ in. long, hair-like, smooth, tawny, shining, woolly and white at the base: spores elliptical, 6 × 4 μ.

Agaricus (Galera) minutus, Quel., Jura, iii. 10, t. 1, f. 5; Cke., Illustr., pl. 466B; Cke., Hdbk., p. 186.

On decayed wood.

Readily distinguished by its small size.

††† ERIODERMEI.

Galera ravida. Fr.

Pileus ½–1½ in. across, almost membranaceous at first campanulate then hemispherical, even, moist, very slightly viscid, truly hygrophanous, rather silky when dry, colour greyish, the margin when young more or less fringed with tooth-like fragments of the white veil; stem about 1½ in. long, about 1 line thick, equal, hollow, very fragile, ascending or twisted, pallid or with a yellow tinge, but silvery shining, fibrillosely striate, apex slightly mealy; gills almost free, broad, ventricose, distant, saffron-ochre or yellowish.

Agaricus (Galera) ravidus, Fries, Epicr., p. 204; Cke., Hdbk., p. 186; Cke., Illustr., pl. 467A.

On rotten wood, or on the ground among chips, &c.

Gregarious. Fragile. Pileus dingy ochraceous and somewhat silky when dry. Stem often rather twisted.

Galera mycenopsis. Fr.

Pileus up to ¾ in. across, flesh very thin, campanulate then expanded, disc even, striate to the middle, at first white and silky near the margin from the veil, pale ochraceous; gills adnexed, seceding, ventricose, 1½ line broad, rather distant, whitish then pale ochraceous; stem 3–4 in. long, attenuated, with a white silkiness, hollow.

Agaricus mycenopsis, Fries, Obs., ii. p. 38; Cke., Hdbk., p. 186; Cke., Illustr., pl. 467B.

In marshy ground amongst sphagnum, &c.

Stem soft, 2–4 in. long, generally undulated, yellowish with an evanescent silky down, fibrillosely striate, apex pruinose. Pileus ochraceous becoming pale, 3–10 lines broad, glabrous when adult, not viscid nor depressed. (Fries.)

NAUCORIA. Fries. (figs. 8, 9, p. 3.)

Pileus more or less fleshy, conical, or convex then expanded and becoming flattened, margin at first incurved; stem central, cartilaginous, hollow or spongy inside; gills free, adnexed, or adnate, not decurrent; veil fugacious, squamulose, or absent.

Naucoria (as a subgenus of *Agaricus*), Fries, Syst. Myc., i. p. 260; Cke., Hdbk., p. 173.

The species are mostly small and usually of a brownish colour, growing on the ground among grass, rarely on wood. *Naucoria* is most nearly allied to *Galera*, but distinguished by the pileus being more fleshy, and not striate, and more especially in the margin being incurved when young, this last character, however, is rather indistinct in a few species, as *N. cucumis*, *N. cidaris*, and *N. badipes*, nevertheless the sum of characters retain these species in the present genus.

Naucoria agrees morphologically with *Leptonia* and *Collybia*.

The species included under the present tribe are very variable amongst themselves, but all agree in the following characters. Spores ferruginous; stem cartilaginous; the more or less fleshy pileus having the margin at first incurved. (Fries.)

ANALYSIS OF THE SPECIES.

† Gymnoti.

Pileus glabrous; veil absent; spores ferruginous, not ferruginous-brown.

* Gills free or slightly adnexed.

** Gills adnate; pileus convexo-plane.

*** Gills adnate; pileus campanulate then expanded.

†† Phaeoti.

Pileus naked; gills and spores ferruginous-brown; veil not conspicuous.

* *Pediadei;* growing in fields and pastures.

** *Scorpioidei;* growing in woods and damp, uncultivated places.

††† Lepidoti. (*Typical species.*)

Pileus flocculose or squamulose; veil evident; spores ferruginous.

* Scales of pileus superficial, disappearing.

** Pileus innately (persistently) squamulose.

*** Pileus destitute of squamules, but silkily atomate.

† GYMNOTI.

* *Gills free or slightly adnexed.*

Naucoria lugubris. Fr.

Pileus 1½–3 in. across, fleshy, campanulate then expanded, undulate, gibbous, even, smooth, pallid then ferruginous, sometimes bay at the disc; flesh white; gills free, ventricose, very broad behind, narrow in front, crowded, pallid then ferruginous, margin usually serrated; stem 3–4 in. long, 3–5 lines thick, rigid, smooth, fusiformly-rooting, externally remarkably cartilaginous, pallid becoming ferruginous below, hollow; spores pip-shaped, 7 × 4 μ.

Agaricus (Naucoria) lugubris, Fries, Syst. Myc., i. p. 254; Cke., Hdbk., p. 173, Cke., Illustr., pl. 1187.

On the ground amongst grass, &c.

Stem 4 in. long, 4 lines thick, base at length reddish. Pileus 3 in. broad, now and then tenaciously viscid. A remarkable form occurs in pine woods with the pileus bullate, disc bay, stem short (2 in.). (Fries.)

Naucoria festiva. Fr.

Pileus about 1 in. across, flesh thin except at the apex, convex, rather gibbous, even, glutinous, usually brownish-

olive, dirty pale ochraceous when dry; gills free, ventricose, crowded, about 2 lines broad, pale becoming ferruginous; stem 2–3 in. long, 2–3 lines thick, equal, attenuated and rooting at the base, smooth, even, usually whitish, but sometimes variously coloured, hollow; spores elliptical, pale ferruginous, 12 × 6 μ.

Agaricus (Naucoria) festiva, Fries, Epicr., p. 192; Cke., Hdbk., p. 173; Cke., Illustr., Suppl., pl. 969.

Amongst grass.

A very fine species, but from the variable colours difficult to define. Stem 2 in. long, 2–4 lines thick if equal, but varying, ventricose and compressed, violet, rufous, &c. Pileus 1–2 in. broad, straw-colour with an olive tinge when dry, bay, rufous, &c. Gills at first white then olive or yellowish or rufous-blood-red. (Fries.)

Naucoria obtusa. Cke. & Mass.

Pileus about 1 in. broad and high, campanulato-convex, very obtuse, faintly striate at the margin, rufous or orange-tawny, becoming pale; broadly adnate, with a slight decurrent tooth, 2–3 lines broad, ventricose, cinnamon, margin serrate; stem about 2 in. long, 2–3 lines thick, equal, even, yellowish flesh-colour or pale cinnamon, darker within, especially at the base, hollow; spores elliptical, 7–8 × 4 μ.

Agaricus (Naucoria) obtusus, Cke. & Massee, Grev., xviii. p. 52; Cke., Illustr., pl. 1155.

On the ground.

There is no trace of a veil. Known amongst the large, broad-gilled species of *Naucoria* by the broadly adnate, serrate gills. The same features, along with the shorter and thicker stem, separates the present species from *Galera ovalis*, which it somewhat resembles in size and general appearance.

Naucoria hamadryas. Fr.

Pileus 1½–2 in. across, flesh thin, convex then expanded, gibbous, even, ferruginous-bay, when old and dry yellowish; gills slightly adnexed, narrowed behind, about 2 lines broad, crowded, opaque, ferruginous; stem 2–3 in. long, 3 lines thick, equal, fragile, glabrous, pallid, hollow; veil absent; spores elliptical, ferruginous, 13–14 × 7 μ.

Agaricus (Naucoria) hamadryas, Fries, Monogr., i. p. 366 Fries, Icon., t. 121, f. 3; Cke., Hdbk., p. 174; Cke., Illustr. Suppl., pl. 965.

On the ground under trees, &c. Hygrophanous.

Naucoria cidaris. Fr.

Pileus about 1 in. broad and high, flesh thin, conical then campanulate, even, margin slightly striate, more or less undulated, cinnamon-tan, tan-colour when dry; gills adfixed then seceding, crowded, ventricose, ascending, honey-colour stem about $1\frac{1}{2}$ in. long, attenuated downwards, 2–3 lines thick at the apex, blackish-brown, hollow.

Agaricus (Naucoria) cidaris, Fries, Epicr., p. 192; Cke. p. 174; Cke., Illustr., pl. 451.

On the ground in pine woods, round trunks, &c.

Stem often compressed and flexuous, tough, allied to *Naucoria cucumis*, but distinguished by the absence of a strong smell, as in the last-named species. A smaller, more elegant form, with the pileus tawny-cinnamon, stem straight, and gills crowded.

Naucoria cucumis. Pers.

Pileus $\frac{2}{3}$–1 in. across, rather fleshy, broadly campanulate obtuse, glabrous, even, bay-brown when moist, fawn-colour or tan when dry; gills adnexed, ventricose, pale then saffron-colour, crowded: stem firm, 1–2 in. long, $1\frac{1}{2}$ line thick, attenuated downwards, stuffed below, hollow above bay or blackish-brown, paler and slightly pruinose upwards

Agaricus (Naucoria) cucumis, Fries, Hym. Eur., p. 255; Cke., Hdbk., p. 174; Cke., Illustr., pl. 452.

Agaricus cucumis, Pers., Syn., p. 319.

On the ground amongst fragments of wood, sawdust, &c.

Distinguished by the strong smell of cucumber. The dark colour of the pileus disappears at the margin first on drying.

Naucoria anguinea. Fr.

Pileus $1\frac{1}{2}$–2 in. across, rather fleshy, campanulate then convex, gibbous, even, yellowish-tan colour, when young with a silky zone near the margin, the remains of the white, fibrillose veil; gills nearly free, crowded, linear, pale yellow then ferruginous; stem 2–3 in. long, 2–3 lines thick, slightly

thickened at the base, rather wavy, brownish, densely covered with white fibrils, silky-spotted when dry.

Agaricus (Naucoria) anguineus, Fries, Epicr., p. 193; Cke., Hdbk., p. 174; Cke., Illustr., p. 455.

On the ground.

Allied to *N. cucumis*, but distinguished by being more robust, larger, absence of cucumber-like smell, and by the presence of the veil near the edge of the pileus.

Naucoria centuncula. Fr.

Pileus ½–1 in. across, rather fleshy, often excentric, convexo-plane, obtuse, even, dry, lurid-greenish, then yellowish-green, becoming pale, but not hygrophanous; gills adnate but soon separating from the stem, broad, thickish, greyish-yellow, margin minutely toothed with greenish-yellow flocci; stem about 1 in. long, 1–2 lines thick, almost equal, usually, from the position, curved, yellowish-grey, powdery above, with white down at the base, hollow.

Agaricus (Naucoria) centunculus, Fries, Syst. Myc., i. p. 262; Cke., Hdbk., p. 174; Cke., Illustr., pl. 601A.

On rotten wood.

Gregarious, sometimes rather caespitose, firm, tough, veil absent, colour more or less green.

Naucoria horizontalis. Bull.

Pileus ½–¾ in. across, fleshy, convexo-plane, obtuse, even, pale cinnamon; gills rounded behind, almost free, broad, rather distant, plane, cinnamon; stem ¼–½ in. long, 1 line thick, solid, smooth, incurved, pale cinnamon.

Agaricus horizontalis, Bulliard, t. 324; Cke., Hdbk., p. 175; Cke., Illustr., pl. 601B.

On trunks of elm, &c.

Gregarious, growing horizontally, every part cinnamon.

Naucoria semiflexa. B. & Br.

Pileus up to ½ in. across, convexo-plane, chestnut-colour, margin fringed with a delicate white, silky veil, hygrophanous; gills adnexed, rather broad and distant, brownish; stem ¼–½ in. long, incurved, pale, solid; flesh white, as is also that of the pileus; spores elliptical, amber, rather coarsely warted, 8 × 5 μ.

Agaricus (Naucoria) semiflexus, B. & Br., Ann. Nat. Hist., n. 1246; Cke., Hdbk., p. 175; Cke., Illustr., pl. 509A.

On wood and on the ground.

A small, gregarious species, distinguished by the dark-brown pileus that is white and silky near the margin from the veil, and the rough spores.

Naucoria rimulincola. Rabh.

Pileus about ½ in. across, convex, umbilicate, margin plicate, rugulosely-tomentose, pale cinnamon; gills adnexed, rather distant, thick, very broad in proportion, pale cinnamon; stem more or less excentric, incurved, pale, solid, about ½ in. long; spores 10 × 5, cinnamon.

Agaricus (Naucoria) rimulincola, Rabenh., exs. Fung. Eur., n. 1511; Flora, 1851, p. 505; Cke., Hdbk., p. 175; Cke., Illustr., pl. 509B.

On twigs, &c.

Distinguished by the coarsely-plicate pileus and the broad, distant gills.

** *Gills adnate, pileus convexo-plane.*

Naucoria abstrusa. Fr.

Pileus ⅝–1 in. across, convex then flattened, orbicular, even, smooth, viscid, ferruginous-tan; flesh dingy, very thin at the margin; gills adnate, crowded, plane, cinnamon or dilute ferruginous; stem 1–1½ in. long, 1–2 lines thick, equal, straight, polished, naked, even, pale ferruginous, darker at the base, hollow; spores elliptical, smooth, 10 × 5 μ.

Agaricus (Naucoria) abstrusus, Fries, Epicr., p. 194; Cke., Hdbk., p. 175; Cke., Illustr., pl. 456.

On leaf-soil, sawdust, &c.

Stem distinctly cartilaginous, tough. *N. sideroides* somewhat resembles the present, but grows on wood. *N. melinoides* has the margin of the pileus striate.

Naucoria innocua. Lasch.

Pileus about 1 in. across, rather fleshy, convex, obtuse, almost glabrous, striate, reddish-brown, becoming pale; gills adnate, rather crowded, narrow, yellowish-ochre; stem about 1 in. long, and 2 lines thick, paler than the pileus, whitish-

fibrillose, woolly at the base, stuffed; spores elliptical, 10–11 × 4–5 μ.

Agaricus (Naucoria) innocuus, Lasch, n. 398; Cke., Illustr., pl. 489A; Cke., Hdbk., p. 176.

On damp ground.

Naucoria cerodes. Fr.

Pileus ⅔–1½ in. across, campanulato-convex then expanded, obtuse, at length depressed, orbicular, smooth, even, hygrophanous, watery cinnamon when moist, silky and wax-colour when dry; gills adnate, separating from the stem, broad, cinnamon-colour, rather distant; stem 1½–2½ in. long, 2 lines thick, equal, naked, yellowish, base ferruginous, hollow; spores elliptical, smooth, 6 × 3 μ.

Agaricus (Naucoria) cerodes, Fries, Epicr., p. 195; Cke., Hdbk., p. 176; Cke., Illustr., pl. 489B.

Amongst grass; on burnt soil, &c.

Gregarious. Margin of pileus sometimes slightly pellucidly striate when moist. Resembling in colour *Galera hypnorum*; the latter, however, differs in the umbonate pileus, broader gills, and longer stem.

Naucoria melinoides. Fr.

Pileus ½–1 in. across, convex then almost plane, slightly gibbous, even, glabrous, tawny when moist, ochraceous when dry, slightly striate at the margin when old; gills adnate, triangular-oblong, crowded, margin minutely dentate, somewhat tawny or honey-colour; stem about 1½ in. long, 1 line or more thick, equal or slightly thinner upwards, coloured like the pileus, base paler, sprinkled with white meal at the apex, hollow, rather firm; spores elliptical, 10–12 × 4–5 μ.

Agaricus (Naucoria) melinoides, Fries, Epicr., p. 195; Cke., Hdbk., p. 176; Cke., Illustr., pl. 457A.

Amongst grass on lawns, &c.

Pileus 2 lines to 1 in. broad, submembranaceous, umbonate, when moist tawny, margin pellucid, ochraceous or whitish when dry. Gills very variable, adnexed or broadly adnate, ventricose, at first paler than the pileus, at length cinnamon. Stem 1–2 in. high, scarce 1 line thick, fistulose above, subpruinose, thickened below and downy, changing colour. The gills remain bright. (Berk.)

Naucoria pusiola. Fr.

Pileus about ½ in. across, rather fleshy, hemispherical then expanded, obtuse, even, smooth, rather viscid, yellow, not hygrophanous; gills adnate, broad, crowded, plane, pallid then cinnamon; stem about 1 in. long, not 1 line thick, tough, glabrous, yellow, shining, slightly viscid; spores elliptical, $8 \times 4\ \mu$.

Agaricus (Naucoria) pusiolus, Fries, Epicr., p. 195; Cke., Hdbk., p. 176; Cke., Illustr., pl. 457B?

Amongst grass, moss, &c.

Somewhat variable, but always small, and readily distinguished by the yellow pileus and stem being slightly viscid.

It is doubtful whether the figure given by Cooke and quoted above, represents the present species, as pileus, stem, and flesh are represented of a uniform, pale reddish-brown; gills tawny, subdecurrent.

*** *Gills adnate, pileus campanulate, then expanded.*

Naucoria nucea. Bolton.

Pileus ½–¾ in. across, flesh very thin, almost globose, umbilicate, often punctate, margin more or less lobed, incurved, pale chestnut; gills narrowed behind, adnate, ascending, rather crisped, cinnamon; stem about 3 in. long, 1½ lines thick, silky-fibrillose, white; spores elliptical, base apiculate, $10\text{–}11 \times 6\ \mu$.

Agaricus nuceus, Bolton, Hist. Fung. Halifax, p. 70, t. 70; Cke., Hdbk., p. 176; Cke., Illustr., pl. 490A (copied from Bolton).

On the ground amongst firs, &c.

The root is a hard tubercle, furnished with fibres of a mouldy grey colour.

The stem is upright, fistular, of a pale dead white, and about the thickness of a crow's quill near the root, growing gradually smaller upwards; the height is about four inches, the substance thin, tender, and easily splitting in small shining filaments.

The gills are arranged in three series; they are broad and thin, gently waved on the edges, and touch not the stem with their base; the substance is thin and delicate, and the colour a pale pretty brown.

The pileus the size and colour of a Spanish hazel-nut; the top umbilicated, the margin lobed and very much rolled in, so as to touch the stem, or even to pass by it; the opposite lobes pressing against it, or lying over each other. It is destitute of flesh, of a dry, pliable substance, and a smooth, dry, silky shining surface. (Bolton.)

Naucoria glandiformis. W. G. Sm.

Pileus about 1 in. high and broad, at first obtusely campanulate, becoming somewhat hemispherical, or filbert-shaped, nut-brown, smooth, even; gills very broad, ½ in. and more, rounded behind, adnexed, umber; stem 3–4 in. long, 2 lines thick, even, erect, equal, pallid, sometimes twisted, stuffed then hollow; spores broadly almond-shaped, 10–12 × 6–8 μ.

Agaricus (Naucoria) glandiformis, W. G. Smith, Grev., xiii. p. 59; Cke., Hdbk., p. 177; Cke., Illustr., pl. 490B.

On the ground.

Readily known by the very broad, rusty-umber gills and the dark, campanulate pileus.

Naucoria badipes. Fr.

Pileus ½–¾ in. across, submembranaceous, campanulate then convex, slightly umbonate, glabrous, pellucidly striate up to the umbo, yellowish rusty, pale tan when dry; gills adnate, ventricose, about 1 line broad, rather distant, yellowish rust-colour; stem 2–3 in. long, 1½ line thick, hollow, equal, rigid, ferruginous, variegated up to the middle with white, fibrillose squamules; spores elliptical, 10 × 5 μ.

Agaricus (Naucoria) badipes, Fries, Epicr., p. 196; Cke., Hdbk., p. 177; Cke., Illustr., pl. 491A.

On the ground in damp places.

Stem 2–3 in. long, 2–3 lines thick, somewhat flexuous, paler above the middle, even, naked, base fuscous. Pileus 4–6 lines broad, gilvous-ferruginous when moist, even and tan-colour when dry, margin almost straight. Resembles a *Galera*, but distinguished by the squamules of the veil on the stem. (Fries.)

Naucoria hydrophila. Mass.

Pileus ½–1½ in. across, campanulate then slightly expanded, acutely umbonate, glabrous, margin striate when moist, pale

ochraceous-tan with a distinct tinge of green here and there; flesh very thin, greenish; gills adnexed, rather crowded, 1½ line broad, pallid then brownish, margin pale; stem 1½–2 in. long, 1 line thick, equal, flexuous, smooth, even, with red and green tints, hollow; spores elliptical, brown, 13–14 × 6–7 μ.

Agaricus (Naucoria) nasutus, Kalchbr., Cke., Hdbk., p. 376; Cke., Illustr., pl. 1172A.

In swampy places under trees.

Gregarious. The present species was referred by Cooke to *Ag. nasutus*, Kalchbrenner, an Australian fungus, from which, however, it is perfectly distinct, neither is it referable to any other known species.

Naucoria scolecina. Fr.

Pileus ½–¾ in. across, rather fleshy, campanulato-convex then plane, margin slightly striate; rusty-bay, paler towards the margin; gills adnate, rather distant, white with a flesh-coloured tinge, then ferruginous, margin downy; stem 2–3 in. long, 1 line thick, equal, flexuous, reddish ferruginous, sprinkled with white meal, hollow; spores dark ferruginous in the mass, elliptical, 10 × 6 μ.

Agaricus (Naucoria) scolecinus, Fries, Epicr., p. 194; Cke., Hdbk., p. 177; Cke., Illustr., pl. 491B.

On moist ground under alders, &c.

Stem becoming fuscous at the base; pileus ferruginous-bay, margin paler, opaque; gills broadest behind.

Naucoria striaepes. Cooke.

Caespitose, or gregarious. Pileus 1–1½ in. across, campanulate, obtuse, then expanded and often more or less gibbous, smooth, even, ochraceous; gills adnexed, rather distant, 2–3 lines broad, tawny-cinnamon; stem 2–3 in. long, 2–3 lines thick, equal, straight or variously bent or flexuous, hollow, white distinctly longitudinally striate; spores narrowly elliptical, 10–12 × 4 μ.

Agaricus (Naucoria) striaepes, Cke., Grev., xiii. p. 60; Cke., Hdbk., p. 177; Cke., Illustr., pl. 478.

Amongst grass on lawns, &c.

Readily distinguished by the campanulate, ochraceous pileus and white, distinctly striate stem.

Naucoria sideroides. Bull.

Pileus ½–1 in. broad, flesh very thin, white, campanulate, then expanded, umbonate, glabrous, viscid, yellowish-cinnamon, ochraceous-tan and rather shining when dry, margin entire, incurved when young; gills adnate with a decurrent tooth, narrow, crowded, pale ochraceous then cinnamon; stem 2–3 in. long, 1–2 lines thick, slightly attenuated upwards, even, glabrous or sprinkled with white powder at the apex, pallid then yellowish, ferruginous downwards, base at length brownish; spores elliptical, pale yellow, 8–10 × 4–6 μ.

Agaricus (*Naucoria*) *sideroides*, Bull., t. 588; Cke., Hdbk., p. 178; Cke., Illustr., pl. 458A.

On trunks, chips, &c.

Stem sometimes hollow, at others stuffed. Gills adnate with a decurrent tooth, sometimes sinuate, and hence uncinately adfixed. A terrestrial form differs in being paler and honey-colour. (Fries.)

Naucoria triscopoda. Fr.

Pileus up to ½ in. across, flesh thin, at first hemispherical, obtuse, then convexo-plane, umbo prominent, even, glabrous, fine bay-colour when moist, ochraceous when dry, always opaque; gills adnate, plane, thin, somewhat crowded, dark ferruginous; stem ½–1½ in. long, not 1 line thick, equal, curved or flexuous, glabrous, opaque, ferruginous, base umber, stuffed then minutely hollow; spores elliptical, 6–8 × 3–4 μ.

Agaricus (*Naucoria*) *triscopus*, Fries, Monogr., i. p. 375; Cke., Hdbk., p. 178; Cke., Illustr., pl. 458B.

On old wood.

Gregarious or scattered. With the habit of *Galera spartea*, but most nearly allied to species of *Naucoria*.

†† PHAEOTI.

* *Pediades. Growing in cultivated places.*

Naucoria vervacti. Fr.

Pileus about 1 in. across, fleshy, convexo-plane, slightly umbonate, even, glabrous, viscid, shining when dry, pale

yellow; gills adnate with a decurrent tooth, crowded, becoming ventricose, pallid then ferruginous-brown, nearly 2 lines broad; stem 1–1½ in. long, glabrous, rigid, whitish, not rooting, stuffed then hollow; spores elliptical, 12–16 × 8–10 μ.

Agaricus (Naucoria) vervacti, Fries, Epicr., p. 197; Cke., Hdbk., p. 178; Cke., Illustr., pl. 617A.

In meadows, gardens, &c.

Stem short, rather thick, sometimes attenuated upwards, at others downwards. Pileus yellow. (*Fries.*)

Naucoria pediades. Fr.

Pileus 1–2 in. across, flesh thin, convex then plane, obtuse, sometimes becoming slightly depressed, dry, at length minutely rivulose but never striate, yellow-ochraceous then pale tan-colour; gills adnexed, about 2 lines broad, crowded at first, then rather distant, at first brownish then dingy-cinnamon; stem 2–3 in. long, 1–2 lines thick, somewhat flexuous, silky, yellowish, base slightly bulbous, stuffed with a distinct pith; spores dingy ferruginous, elliptical, 10–12 × 4–5 μ; cystidia fairly numerous, 30–50 × 8–10 μ.

Agaricus (Naucoria) pediades, Fries, Epicr., p. 197; Cke., Hdbk., p. 178; Cke., Illustr., pl 492.

In pastures.

Stature variable, stem usually elongated; spores about an inch broad, ochraceous then tan-coloured. (Cooke.)

Naucoria arvalis. Fr.

Pileus up to 1 in. across, tough, flesh rather thick, convex then expanded, orbicular obtuse, even, glabrous, slightly viscid, yellowish-brown, paler when dry; gills adnexed, rather distant, plane, 3 lines broad, brownish-white, then ferruginous; stem about 1½ in. long, 2 lines thick, even, pulverulent, yellowish, continued downwards into a long, rooting base; spores elliptical, 9 × 5 μ.

Agaricus (Naucoria) arvalis, Fries, Epicr., p. 197; Cke., Hdbk., p. 179; Cke., Illustr., pl. 479 (variety).

On the ground in fields, gardens, &c.

There is no vestige of a veil present. Allied to *N. semi-orbicularis*, but distinguished from this and every known species by the long, rooting base of the stem.

The plant figured is not the typical form; pileus ¾–1½ in. Stem 1½–2½ in. With a distinct bulb between the ascending and descending portion of the stem. It is probably a distinct variety. (Cooke.)

Naucoria semiorbicularis. Bull.

Pileus 1–2 in. across, flesh thin, whitish; hemispherical then expanded, even, glabrous, slightly viscid, at length rivulose, tawny-ferruginous, ochraceous when dry; gills adnate, rarely sinuate, very broad, crowded, pallid then ferruginous; stem 2–4 in. long, 1–1½ line thick, tough, nearly straight, pale ferruginous, shining, base usually darker, containing a free strand in the interior which readily splits into fibrils; spores elliptical, 10 × 5–6 μ.

Agaricus semiorbicularis, Bull., Champ., t. 422; Cke., Hdbk., p. 179; Cke., Illustr., pl. 493 (not typical, if the right species).

Amongst short grass, &c.

Gills 3 lines broad. Allied to *N. pediades*, distinguished by the viscid pileus and ferruginous stem.

Naucoria tabacina. D.C.

Pileus ½–1 in. across, flesh thin, almost plane, very obtuse, even, glabrous, hygrophanous, margin involute, umber, then cinnamon-bay when moist, dingy pale tan when dry; gills adnate, crowded, plane, at length cinnamon-bay; stem 1–2 in. long, 1–2 lines thick, glabrous, naked, cinnamon, base fuscous, hollow, sometimes slightly wavy; spores elliptical, 8–9 × 4–5 μ.

Agaricus tabacinus, D.C., Flor. Fr., vol. v. p. 46; Cke., Hdbk., p. 179; Cke., Illustr., pl. 493B.

By waysides, &c.

Subcaespitose. All one colour when moist, with the habit of *Naucoria cucumis*; pileus becoming cinnamon-bay, dingy tan when dry; 3–9 lines broad, rather fleshy. Gills somewhat linear, not broader behind, at first yellowish, soon umber, at length becoming ferruginous. Stem at times 2 in. long, equal, flexuous; sometimes only about 1 in. long, thicker, attenuate at the base. A distinctly interwoven, appendiculate veil is rarely present; whereas in others from the same cluster, not a trace of the veil is visible. (Fries.)

** *Scorpioidei.* *Growing in woods and damp uncultivated places.*

Naucoria tenax. Fr.

Pileus ½–1 in. across, flesh rather thick, campanulate then expanded, viscid, hygrophanous, glabrous, even, colour between pale cinnamon and olive, or brownish-yellow, becoming pale when dry, hygrophanous; gills adnate, rather distant, brownish-white, becoming pale ferruginous, stem 1–2 in. long, about 1 line thick, stuffed then hollow, equal, adpressedly fibrillose, yellowish, becoming tinged fuscous or olive, spores elliptical, 8 × 5 μ.

Agaricus (*Naucoria*) *tenax*, Fries, Epicr., p. 198; Cke., Hdbk., p. 179; Cke., Illustr., pl. 617B.

Amongst grass, and on sticks.

Stem, depending on locality, sometimes ferruginous, at others olivaceous. Pileus sometimes rugulose, usually cinnamon when moist, margin watery-yellow or with a greenish tinge, ochraceous when dry. Gills pallid brownish-olive, becoming ferruginous. (Fries.)

Naucoria myosotis. Fr.

Pileus 1–2 in. across, convex then expanded, subumbonate, covered with a viscid pellicle, olive or brownish-green, becoming pale and yellowish, disc darker; gills adnato-decurrent, rather distant, at length rusty-brown, margin serrulate, white; stem 3–6 in. long, 2–3 lines thick, equal sometimes flexuous, rather firm, hollow, squamulose, or with dark fibrils, pallid, becoming brownish, apex powdered with white meal; spores elliptical, 11–12 × 6 μ.

Agaricus (*Naucoria*) *myosotis*, Fries, Epicr., p. 198; Cke., Hdbk., p. 180; Cke., Illustr., pl. 494.

In damp localities, swamps, amongst sphagnum, &c.

Pileus hygrophanous, viscid when moist, minutely rugulose, dark honey-yellow, disc darker, silky, veil remaining in tufts at the margin; gills rather distant, ventricose, with a decurrent tooth, margin minutely serrulate, paler, at first pale yellow with a pink tinge, then ferruginous. Stem long, hollow, striate, mealy at the apex, whitish then rufous, with silky, fibrillose scales and evanescent fibrillose ring.

Naucoria temulenta. Fr. (figs. 8, 9, p. 3.)

Pileus ⅝–1 in. across, somewhat membranaceous, campanulate then convex, subumbonate, margin slightly striate, glabrous, ferruginous when moist, ochraceous when dry; gills adnate, narrowed in front, rather distant, lurid, then ferruginous-umber; stem about 2 in. long, 1½ line thick, flexuous, glabrous, polished, apex slightly mealy, hollow, but the hollow often containing a loose pith; spores elliptical, 12 × 6 μ.

Agaricus (Naucoria) temulentus, Fries, Epicr., p. 199; Cke., Hdbk., p. 180; Cke., Illustr., pl. 459.

In moist woods, &c.

Slender; pileus somewhat umbonate, never depressed nor pelliculose, ferruginous, ochraceous-tan and without striae when dry. (Fries.)

Somewhat resembling *N. pediades*, but distinguished by the pileus being striate at the margin when moist, and also in being umbonate.

Naucoria latissima. Cooke.

Pileus ½–1½ in. across, subglobose then hemispherical, with a fleshy disc, margin at first incurved, deep chestnut-brown; gills adnexed, rounded behind, ¼ in. and more across, tawny-umber; stem 1½–2 in. long, 2–4 lines thick at the apex, attenuated downwards into a rooting base, smooth, dark brown below, pale above, hollow.

Agaricus (Naucoria) latissima, Cke., Hdbk., p. 180; Cke., Illustr., pl. 482.

Amongst grass.

Allied to *N. arvalis* in the rooting stem, but known by the margin of the pileus being incurved at first, and the smooth (not powdered) stem. Also resembling *N. glandiformis* in the colour of the pileus and the very broad gills, but distinguished by the tapering, rooting stem.

††† LEPIDOTI.

* *Scales of pileus superficial, disappearing.*

Naucoria porriginosa. Fr.

Pileus ⅝–1½ in. across, flesh thin, convex then expanded but not flattened, obtuse, viscid, tawny, becoming pale, tan-colour when dry, margin slightly striate when old, sprinkled with superficial, evanescent, saffron-coloured squamules; gills adnate, usually with a minute decurrent tooth, crowded, at first yellow, then tawny-cinnamon; stem 2–3 in. long, 1½–2½ lines thick, hollow, equal, rather soft, silky, becoming smooth, pallid.

Agaricus (Naucoria) porriginosus, Fries, Epicr., p. 200; Cke., Hdbk., p. 180; Cke., Illustr., pl. 510.

Amongst twigs, &c.

The largest and most beautiful species included in the present genus, readily distinguished by the viscid, tawny orange pileus, which is at first covered with yellow or saffron-coloured, minute, floccose scales.

Naucoria sobria. Fr.

Pileus ½–¾ in. across, flesh thin, convex then plane, slightly viscid, somewhat silky, honey-colour when moist, disc darker, becoming pale, slightly pruinose towards the margin from the fugacious veil; gills broadest behind, adnate, crowded, broad, pale saffron-colour; stem about 1½ in. long and 1½ line thick, hollow, rather firm, straight or slightly flexuous, equal, pale above, rusty-brown below, here and there sprinkled with white, silky spots, the remains of the veil; spores 14–16 × 10 μ.

Agaricus (Naucoria) sobrius, Fries, Epicr., p. 200; Cke., Hdbk., p. 181; Cke., Illustr., pl. 511A.

Veil small, like a furfuraceous or pruinose remnant at first on margin of pileus and stem. Pileus not hygrophanous. Gills with a decurrent tooth, margin whitish.

Var. **dispersus**, Berk. & Broome, Ann. Nat. Hist., no. 1348; Cke., Hdbk., p. 181; Cke., Illustr., pl. 511B.

Pileus 3–4 lines across, convex, ochraceous, delicately punctulate, margin furfuraceous; stem ¾–1 in. long, 1 line

thick, equal or incrassated above, equal, furfuraceous, fistulose; ring appendiculate; gills pallid, adnate, plane, margin white.

Agaricus dispersus, Persoon, Myc. Eur., vol. iii. n. 268.

On lawns amongst short grass.

** *Pileus persistently squamulose.*

Naucoria erinacea. Fr.

Pileus ½–¾ in. across, flesh thin, convex, umbilicate, rusty-umber, scaly with erect, squarrose, tufts of fibrils, margin at first involute and cortinate; gills adnate, rather crowded, broadish, rusty-brown, margin quite entire; stem about ½ in. long, not a line thick, equal, incurved, rusty-brown, hairy; spores variable, elliptical, 9–15 × 6–9 μ.

Agaricus (*Naucoria*) *erinaceus*, Fries, Epicr., p. 201; Cke., Hdbk., p. 181; Cke., Illustr., pl. 480A.

On dead branches.

Small, dry, persistent as in *Marasmius*. Entirely rusty-brown. Allied to *N. siparia*, but known by the stem being squamulose nearly or quite to the apex, and the gills having the margin quite entire.

Naucoria siparia. Fr.

Pileus ⅓–⅝ in. across, convex then obtuse, not umbilicate, reddish-ferruginous, densely clothed with fasciculate tufts of down resembling minute scales; gills adnate, broad, rather distant, coloured like the pileus, margin flocculose; stem about 1 in. long, slender, stuffed, equal; peronate, squamulose up to the ring, apex naked, glabrous, coloured like the pileus.

Agaricus (*Naucoria*) *siparius*, Fries, Epicr., p. 201; Cke., Hdbk., p. 181; Cke., Illustr., pl. 480B.

On fern stems, soil, &c.

Allied to *N. erinacea*, separated amongst other characters, by the pileus not being umbilicate, and the flesh also thicker, softer, and not dry. The flocoso-squamulose covering is the universal veil, as in *Lepiota granulosa*. (Fries.)

Naucoria conspersa. Pers.

Pileus about ½ in. across, fragile; convex then plane, nearly even, soon becoming broken up into scurfy squamules,

bay-cinnamon when moist, ochraceous when dry, hygrophanous; gills adnate, then separating from the stem, crowded, cinnamon; stem about 1 in. long, 1 line thick, fibrillose, brownish-cinnamon, apex with scurfy squamules.

Agaricus conspersus, Pers., Ic. Descr., t. 12, f. 3; Cke., Hdbk., p. 181; Cke., Illustr., pl. 512A.

On the ground, amongst leaves, sphagnum, &c.

The gills are dark at every stage. Gregarious, fragile. In swamps a remarkable form occurs, 2–3 times as large as the ordinary form, stem long, twisted, umber, white and downy at the base, pileus umbonate, 1½ in. broad, brownish-rufescent, gills broader. (Fries.)

Naucoria escharoides. Fr.

Pileus ½–¾ in. across, flesh thin, white, conico-convex then expanded, obtuse, scurfy or squamulose, tan-colour then whitish, disc becoming brownish; gills adnexed, with a decurrent tooth, at length emarginate, broad, lax, ventricose, pallid-tan then somewhat cinnamon; stem 1–2½ in. long, fragile, hollow, flexuous adpressedly fibrillose, pallid then fuscous, apex rather pruinose; spores elliptic-oblong, 14 × 7 μ.

Agaricus (*Naucoria*) *escharoides*, Fries, Syst. Myc., i. p. 260; Cke., Hdbk., p. 182; Cke., Illustr., pl. 512B.

On naked ground, &c.

Gregarious, subcaespitose; fragile; pileus pale from the first, whitish-tan, disc and stem at length becoming brownish. Gills becoming emarginate, lax, nearly free, variable in colour. (Fries.)

Pileus campanulate, obtuse, slightly fleshy, umbonate or umbilicate, sometimes plane, hygrophanous, innato-squamulose, often venulose, tawny at length pallid; veil white, evanescent; stem flexuous nearly equal, clothed with white fibrils, pale, ringless, fistulose; gills broad, bright cinnamon, distant, fixed, acute behind, at length seceding. Brittle. Spores pure ochre, not peroxidate. (Berk. & Broome.)

*** *Pileus not scaly, silky or atomate.*

Naucoria carpophila. Fr.

Pileus 1–3 lines broad, somewhat membranaceous, convex, obtuse, hygrophanous, pale tan when moist, pallid or whitish

when dry, minutely scurfy with shining atoms; not pilose, rarely squamulose; stem about ¼ in. long, thin, scurfy then naked, pallid, imperfectly hollow; gills rounded behind and almost free, broad, rather distant, ventricose, crenulate, pallid then ochraceous.

Agaricus (Naucoria) carpophilus, Fries, Epicr., p. 202; Cke., Hdbk., p. 182; Cke., Illustr., 513A.

On Beech pericarps and leaves.

Distinguished by its habitat and minute size.

Naucoria graminicola. Nees.

Pileus 2–4 lines broad, somewhat membranaceous, convex, papillate, fuscous then pale tan, coarsely tomentose; stem about ½ in. long, ½ line thick, tough, hairy, becoming brownish; gills slightly adnexed, rather distant, pale ochraceous.

Agaricus (Naucoria) graminicola, Nees, Syst., fig. 186; Cke., Hdbk., p. 182; Cke., Illustr., pl. 513B.

On grass, twigs, &c.

Pileus about 3 lines broad, seen to be covered with strigose hairs under a lens, brown, becoming ochraceous-fawn colour. (Fries.)

HEBELOMA. Fries. (figs. 16, 17, p. 3.)

Partial veil fibrillose, often absent. Cuticle of the pileus continuous, not scaly nor fibrillose, smooth, more or less viscid, margin of pileus incurved at first; stem central, its flesh continuous with that of the pileus, fibrous, apex somewhat mealy; gills sinuate, adnexed, margin usually paler than the rest; spores dingy tan-colour.

Hebeloma, Fries, Syst. Myc., i. p. 249; Cke., Hdbk., p. 161.

The present genus is closely allied to *Inocybe*, differing more especially in the cuticle being continuous and more or less viscid, and not becoming torn into scales or longitudinal fibrils.

ANALYSIS OF THE SPECIES.

* INDUSIATI.

Veil evident, often making the margin of the pileus superficially silky.

** DENUDATI.

Pileus glabrous, veil absent from the first.

*** PUSILLI.

Pileus scarcely an inch broad.

* INDUSIATI.

Hebeloma musivum. Fr.

Pileus 2–5 in. across, convexo-plane, obtuse, viscid, at length squamulose, margin often wavy, altogether yellow or the disc darker; flesh thick, yellow; gills emarginate, rather crowded, dry, 3–4 lines broad, pale yellow then ferruginous; stem 4–5 in. long, 1 in. thick, equal or ventricose, solid or sometimes hollow above, entirely fibrillose, apex pruinose, pale yellow; veil fibrillose, evanescent; spores elliptical, 12 × 6 μ.

Agaricus (*Hebeloma*) *musivus*, Fries, Epicr., i. p. 178; Cke., Hdbk., p. 161; Cke., Illustr., t. 405.

Cortinarius sulphureus, Lindgr., Bot. Not., 1845.

In pine woods.

Odour faint. Differs widely from all other species of the genus in its bright colours, which suggest *Flammula* or *Cortinarius*; it is retained here on account of the emarginate, glabrous (not powdery) gills; wavy pileus, and pruinose or mealy apex of the stem.

Hebeloma sinuosum. Fr.

Pileus 3–6 in. across, fleshy, deformed, convex then expanded, obtuse, even, glabrous, viscid when young, soon dry, yellowish-red or pale brick-red, rarely tan-colour, the extremes inflexed, crenulato-striate margin exceeding the gills; gills slightly adnexed, broadly emarginate and appearing free and distant, but connected with the stem by a slender tooth, 3–6 lines broad, dry, crowded, often wavy, margin quite entire, dirty-white at first then becoming ferruginous; stem stout, hollow, 4–6 in. long, 1–1½ in. thick, equal, fibrillosely striate, apex at first flocculosely squamulose, white.

Agaricus (*Hebeloma*) *sinuosus*, Fries, Epicr., p. 178; Fries., Monogr., i. p. 323.

In woods.

Usually large, compact when young, very soft when old, smell weak, pleasant. A small form also occurs with the stem not more than 2 in. long. (Fries.)

Hebeloma fastibile. Fr.

Pileus 2–3 in. across, convex then plane, obtuse, somewhat wavy, glabrous, viscid, pale yellow-tan, becoming paler; gills emarginate, rather distant, 2–3 lines broad, pale then cinnamon, edge whitish, distilling drops in rainy weather; stem 2–3 in. long, up to ½ in. thick, solid, wholly fibrous, slightly bulbous, white, fibroso-squamulose; veil distinct, white, sometimes forming a ring; spores elliptical, 10 × 6 μ.

Agaricus (Hebeloma) fastibilis, Fries, Epicr., p. 178; Cke., Hdbk., p. 161; Cke., Illustr., pl. 406.

In woods.

Smell and taste strong; something like radishes; bitterish. Gregarious or somewhat caespitose. Allied to *H. crustuliniforme*, but distinguished by the more distant gills and the presence of an evident veil. Pileus yellowish, pale tan, whitish, &c. Margin sometimes sulcate or plicate.

Var. **elegans.** Pileus purple-brown.

Hebeloma senescens. Batsch.

Pileus 2–4 in. across, convex, almost plane when old, slightly viscid, ochraceous flesh-colour with a tinge of rust-colour, rusty-yellow when old, the margin crisped and hoary; flesh thick, white; gills adnexed, rather crowded, 3 lines broad, pallid then dusky-ferruginous; stem 3–4 in. long, up to ¾ in. thick at the base, thinner upwards, lower portion brown with paler, transversely arranged squamules, apex persistently whitish, solid, or imperfectly hollow with age, flesh white; spores elliptical, 10 × 6 μ.

Agaricus senescens, Batsch, Elench., f. 197; Cke., Hdbk., p. 255; Cke., Illustr., pl. 407.

In pine woods.

Hebeloma glutinosum. Lindgr. (figs. 16, 17, p. 3.)

Pileus 2–3 in. across, convex then plane, obtuse, regular, covered with a tough, glutinous film, yellowish-white, sprinkled with white, superficial squamules; flesh whitish

then pale yellow; gills adnexed, sinuate, with a slightly decurrent tooth, crowded, yellowish, becoming cinnamon-tan; stem about 3 in. long, 4 lines thick, somewhat incrassated at the base, firm, with whitish squamules and fibrils, apex with white meal, cortinate, stuffed, becoming brown inside; partial veil evident; spores elliptical, 10–12 × 5 μ.

Agaricus (Hebeloma) glutinosus, Lindgr., Bot. Not. 1845, p. 199; Cke., Hdbk., p. 161; Cke., Illustr., pl. 430.

Amongst dead leaves, twigs, &c.

Smell peculiar, not unpleasant. Stem fleshy, stuffed, firm, somewhat bulbous, 2–3 in. long, whitish, fibrillose, and squamulose, base frequently strigose, at length tinged ferruginous. Partial veil evident but fugacious. Pileus rather fleshy, convex then plane, regular, obtuse, 2–3 in. across, covered with tough, viscid gluten, and shiny when wet, sprinkled with superficial seceding scales. Pileus variable in colour, typically having the disc brick-red, the remainder yellowish-white. Flesh whitish. Gills arcuately adnexed, broad, crowded, pallid, then yellowish, at length tan-colour and somewhat cinnamon. (*Fries.*)

Hebeloma testaceum. Batsch.

Pileus 1–2 in. across, campanulate then convex, becoming flattened, regular, obtuse, even, rather viscid, pale brick-red or ochraceous-tan; gills attenuated behind, almost free, lanceolate, crowded, narrow, at first ascending, pale then ferruginous; stem about 3 in. long, 3–4 lines thick, hollow, somewhat bulbous, pallid, floccosely-fibrillose, apex mealy; spores elliptical, 10 × 5–6 μ.

Agaricus testaceus, Batsch, f. 198; Cke., Hdbk., p. 162; Cke., Illustr., 408.

In woods.

Odour of radishes. Distinguished amongst the viscid species by the almost free, closely crowded, very thin, narrow gills.

Hebeloma firmum. Pers.

Pileus 2–3 in. across, campanulate then expanded and discoid, umbonate, even, smooth, viscid, brick-red, the broad umbo darker; gills rounded behind, crowded, dry, 2–3 lines broad, tan-colour then ferruginous, margin whitish, serrulate;

stem solid, firm, 2–3 in. long, ⅓ in. thick, pale, usually attenuated and darker downwards, clothed everywhere with white floccose scales; veil evident, white; spores elliptical, 10 × 5 μ.

Agaricus firmus, Pers., Ic. Descr., t. 5. f. 3, 4; Cke., Hdbk., p. 162; Cke., Illustr., pl. 409.

On the ground in fir woods.

Odour weak. The gills do not exude drops of water, hence the gills are not spotted, as in the case where the dark spores are run into clusters by drops of water. Known by the dark pileus and the white, serrate margin of the gills.

Hebeloma claviceps. Fr.

Pileus 1–2 in. across, convex then expanded, disc gibbous, fleshy, remainder very thin, even, naked, pallid, often rather deeper ochre at the disc; gills emarginate, crowded, 1½ line broad, dry, pallid then dingy; stem about 2 in. long, 2–3 lines thick, stuffed, equal, everywhere covered with white meal, brownish below; veil white, evident; spores elliptical, 10–11 × 5 μ.

Agaricus (Hebeloma) claviceps, Fries, Monogr., i. p. 346; Cke., Illustr., pl. 410; Cke., Hdbk., p. 162.

In woods.

Quite distinct from *H. firmum*, P., with which it was at one time joined, in the smaller size of every part, base of the stem fuscous, paler gills, especially in the pileus being at first convex then expanded and discoid, and not conical then campanulate. (Fries.)

Hebeloma punctatum. Fr.

Pileus 1–2 in. across, fleshy, convex, soon plane, disc obtuse or gibbous, always darker in colour and papillose, viscid, umber and depressed at the centre, remainder tan-colour, pale when dry, superficially silky when dry in young specimens; gills narrowed behind and arcuately adnate, slightly ventricose, crowded, narrow, not exceeding 1–2 lines broad, flat, pallid, margin quite entire; stem 2–4 in. long, 2–5 lines thick, equal, generally flexuous, dry, pale, apex with white meal, the remainder adpressedly silky from the veil; veil fugacious, never forming a ring.

Agaricus (Hebeloma) punctatus, Fries, Epicr., p. 179; Cke., Hdbk., p. 162.

In woods.

Gregarious. Smell very slight, not unpleasant.

Hebeloma versipelle. Fr.

Pileus about 3 in across, fleshy, convex, plane, discoid, covered with a thick viscid gluten, the silkiness of the veil adglutinated near the margin, then glabrous, reddish-tan colour, pale tan and opaque when dry; gills rounded behind, crowded, 3–5 lines broad, whitish flesh-colour then tan; stem hollow, tough, whitish-silky, mealy at the apex.

Agaricus (Hebeloma) versipellis, Fries, Epicr., p. 179; Cke., Hdbk., p. 163.

In grassy places, and amongst fir leaves.

Somewhat caespitose; smell weak, not unpleasant.

Changes much with age. Young stage:—stem hollow, tough, about 2 in. long, 2–3 lines thick, equal, distinctly silky-white from the veil, and above the ring of the veil mealy. Pileus fleshy, convexo-plane, obtuse, 1 in. and more across, covered with a tough, glutinous pellicle, reddish-tan, disc becoming pale, with adglutinated white silkiness near the margin; or squamulose according to Lindgr.; gills rounded, crowded, thin, 3 lines broad, margin quite entire, dry, almost white. Adult:—stem longer, not silky, but longitudinally, fibrillosely striate, readily breaking up into fibrils, at length, especially inside, brownish; pileus fragile, 3 in. and more across, everywhere dingy tan, opaque, dry, the pellicle having almost disappeared. Gills 4–5 lines broad, crowded, pallid then cinnamon-tan. (Fries.)

Hebeloma mesophaeum. Fr.

Pileus 1–1½ in. across, flesh thin, conical then expanded, at length plane, disc darker and often depressed, viscid, even and usually glabrous, rarely silky round the margin at first, yellowish, or becoming pallid, disc somewhat bay-colour; gills rounded or emarginate, crowded, thin, flat, dry, not spotted, rusty-tan, the entire margin similarly coloured; stem 2–3 in. long, about 2 lines thick, equal, fibrillose, whitish then ferruginous, base brownish, apex mealy; veil evident but delicate and fugacious; spores elliptical, smooth, 7–8 × 4–5 μ.

Agaricus (Hebeloma) mesophaeus, Fries, Epicr., p. 179; Cke., Hdbk., p. 163; Cke., Illustr., pl. 411.

In pine woods.
Gregarious; variable.

Var. **minor**, Cke., Illustr., pl. 412; Cke., Hdbk., p. 163.
Smaller than the typical form.

Hebeloma subcollariatum. B. & Br.
Pileus about 1 in. across, convex, then more or less expanded, rather fleshy, slightly glutinous, the floccose veil soon disappearing, pale ochraceous-tan, centre darker; gills very slightly rounded behind, broadly adnate, soon separating from the stem and connected behind by a collar-like structure, ventricose, 2–3 lines broad, pale tan-colour, margin whitish; stem about 2 in. long, 2 lines thick, often flexuose, pale, brownish towards the base, pulverulent, stuffed then hollow; spores elliptical, 12–13 × 6 μ.
Agaricus (Hebeloma) subcollariatus, B. & Br., Ann. Nat. Hist., n. 1942; Cke., Hdbk., p. 163; Cke., Illustr., pl. 506.
On naked soil.

** DENUDATI.

Hebeloma sinapizans. Fr.
Pileus 3–6 in. across, fleshy, compact, convex, then plane, very obtuse, for the most part wavy, and often excentric, even, glabrous, slightly viscid when moist, either everywhere tan-colour, or the disc yellowish; flesh white; gills deeply emarginate, 3–5 lines broad, crowded, fragile, cinnamon-tan, always dry and not spotted, never exuding drops of water; stem stout, rigid, imperfectly solid, 3–5 in. long, 1 in. thick, equal or fusiformly rooting, white, fibrillosely striate, apex with white squamules; spores elliptical, 12 × 7 μ.
Agaricus (Hebeloma) sinapizans, Fries, Epicr., p. 180; Cke., Hdbk., p. 163; Cke., Illustr., pl. 413.
In woods.
The largest species in the present genus, remarkably resembling *H. sinuosum*, but sharply separated by the strong radishy smell, and the almost entire absence of a veil. (Fries.)

Stem not truly fibrillose nor squamulose, in which it differs from all other species. Smell almost none. The pileus is sometimes paler, disc tan-colour, margin white, gills crisped, branched and anastomosing. (Fries.)

Hebeloma nudipes. Fr.

Pileus 2–3 in. across, flesh watery, thick at the disc, very thin at the margin and exceeding the gills, convex then expanded, obtuse, unequal, glabrous, viscid, tan-colour, *margin at first incurved, then expanded and ascending;* gills broadly emarginate, crowded, dry, not spotted, quite entire, tan-colour; stem solid, entirely fibrillose, about 2½ in. long, 4–8 lines thick, equal, erect and straight or curved and ascending, glabrous and quite naked upwards, white; spores elliptical, 12 × 6 μ.

Agaricus (*Hebeloma*) *nudipes*, Fries, Epicr., p. 181; Cke., Illustr., pl. 418; Cke., Hdbk., p. 165.

In woods.

Smell weak, not unpleasant, rather mealy.

Hebeloma nauseosum. Cooke.

Pileus 1–1½ in. across, flesh thick at the centre, becoming very thin at the margin, convex and gibbous, then more or less expanded, even, smooth, viscid, ochrey-white; gills deeply sinuate, adnexed, very broad, ventricose, rather distant, pallid then tan-colour, at length ferruginous; stem 1½–2 in. long, 3 lines thick, equal or slightly attenuated below, whitish, mealy above, faintly striate downwards, and in decay turning black at the base, solid; spores elliptical, ends rather acute, 20 × 10 μ.

Agaricus (*Hebeloma*) *nauseosus*, Cke., Grevillea, xvi. p. 43; Cke., Illustr., pl. 963.

On the ground in mixed woods.

The odour is very strong and abominable, especially after having been kept in a box for a night. (Cooke.)

More slender than *H. nudipes*, its nearest ally, in the broad gills and fœtid smell. Smaller and more slender than *H. fastibile*, and without a trace of a veil. *H. crustuliniforme* differs from the present species in the flocculose stem.

Hebeloma capnocephalum. Bull.

Pileus 1–2 in. across, flesh thick at the disc, very thin at

the margin, obtuse, even, smooth, dingy yellowish, margin at length becoming blackish; gills emarginate, broad, scarcely crowded, ferruginous; stem 1½–2 in. long, 3 lines thick at the apex, attenuated downwards, fibrillosely striate, with reddish fibrils, becoming pale; spores elliptical, 9 × 5 μ.

Agaricus capniocephalus, Bulliard, Champ. Fr., t. 547, fig. 2; Cke., Hdbk., p. 165; Cke., Illustr., pl. 419.

On the ground.

Hebeloma ischnostylum. Cooke.

Pileus 1–2 in. across, convex then expanded, broadly umbonate, slightly viscid, white or a little pallid at the disc, margin thin; gills rounded behind, adnexed, slightly serrate at the margin, whitish then dingy tan-colour; stem about 2 in. long, 2 lines thick, equal or a little thickened at the base, smooth, naked, whitish; spores elliptical, 12 × 7 μ.

Agaricus (Hebeloma) ischnostylus, Cke., Grevillea, xii. p. 98; Cke., Illustr., pl. 420.

On the ground among grass.

Inodorous, or with a faint odour of *Spiraea*. Somewhat resembling *H. nudipes* in general appearance and structure, but distinguished by the whitish pileus.

*** PUSILLI.

Hebeloma magnimamma. Fr.

Pileus up to 1 in. across, disc fleshy, remainder thin, with a large projecting umbo, convex then plane, naked, brick-red, becoming pale; gills obtusely adnate, crowded, pallid then ferruginous; stem 1–1½ in. long, 1½ line thick, equal, glabrous, naked, pallid-yellowish, imperfectly hollow.

Agaricus (Hebeloma) magnimamma, Fries, Mon., ii. p. 299; Cke., Hdbk., p. 165; Cke., Illustr., pl. 508A.

Among grass.

Veil absent, hence the pileus has no trace of superficial silkiness.

Hebeloma petiginosum. Fr.

Pileus about ¾ in. across, disc fleshy, remainder thin, conico-convex then expanded, dry, the gibbous disc brown.

remainder becoming yellowish, silkily-hoary; gills free, ventricose; yellow then olive-bay; stem 1½ in. long, 1½ line thick, rather tough, with a reddish tinge, powdery, stuffed then hollow, sometimes rather wavy; spores elliptical, $10 \times 5\ \mu$.

Agaricus (Hebeloma) petiginosus, Fries, Syst. Myc., i. p. 259; Cke., Hdbk., p. 166; Cke., Illustr., pl. 508 B.

On the ground in beech woods, &c.

INOCYBE. Fries. (figs. 11–14, p. 3.)

Universal veil fibrillose, concrete with the cuticle of the pileus, which is either squamulose or fibrillose; stem central, its substance continuous with the flesh of the pileus, often squamulose or peronate; gills usually sinuate, rarely adnate or decurrent, not becoming powdery; spores often angular.

Inocybe, Fries (as a subgenus of *Agaricus*), Syst. Myc., i. p. 254; Cke., Hdbk., p. 149.

The leading characteristics of the present genus are: fibrillose or squamulose pileus, and more or less sinuate or rounded gills not becoming powdered with the spores at maturity; spores dingy pale tan, often angular but sometimes smooth and elliptical. The species are mostly small, dry, and fibrous, although in a few species the pileus eventually becomes smooth and viscid, thus leading to *Hebeloma*, its nearest ally.

ANALYSIS OF THE SPECIES.

* Squarrosi.

Pileus squarrose (covered with scales spreading in every direction); stem scaly, coloured like the pileus.

** Laceri.

Pileus scaly or torn into fibrils (not cracked longitudinally); stem coloured, paler than the pileus, fibrillose.

*** RIMOSI.

Pileus longitudinally fibrillose and soon cracking in the same direction, sometimes adpressedly squamulose; stem fibrillose, slightly tinged with the colour of the pileus.

**** VELUTINI.

Pileus not longitudinally cracked, cuticle interwoven, fibrillose, becoming smooth and adpressedly squamose, disc even; stem polished, smooth, becoming whitish, apex mealy.

***** VISCIDI.

Pileus becoming smooth, viscid.

* SQUARROSI.

Inocybe hystrix. Fr.

Pileus 2–3 in. across, fleshy, flesh firm but not compact, white, convex then expanded, obtuse or slightly gibbous, orbicular, mouse-colour, with revolute and squarrose, floccose scales, fibrillose towards the margin; gills adnate, crowded, narrow, white then brownish; stem solid, firm, 2–3 in. long, 3 lines and more thick, equal or for the most part attenuated at the base, somewhat fusiform, brownish mouse-colour, covered with crowded, revolute squarrose squamules up to the acutely limited zone formed by the veil, pale and smooth above the ring; spores elliptical, smooth, 10 × 5.

Agaricus (Inocybe) hystrix, Fries, Epicr., p. 171; Cke., Hdbk., p. 149; Cke., Illustr., pl. 424.

In beech woods, &c.

Having much the appearance of a small, solitary specimen of *Pholiota squarrosa*, but the colours are very different.

Inocybe relicina. Fr.

Pileus 1–1½ in. across, flesh thin, conical then expanded, obtuse, smoke-colour, with squarrose tomentose scales; gills adnexed, crowded, yellow then olive; stem about 2 in. long, 2–3 lines thick, solid, soft, equal, floccosely scaly.

Agaricus (*Inocybe*) *relicinus*, Fries, Syst. Myc., i. p. 256; Cke., Hdbk., p. 150.

In marshy fir woods, amongst sphagnum, &c.

Distinguished from all other species by the gills being first yellow then olive.

Stem solid, soft, 2 in. long, 2–3 lines thick, equal, floccosely scaly (not squarrose), fibrillose, smoky, apex paler; pileus fleshy, thin, conical then expanded, obtuse, ½ in. broad when young, everywhere covered with squarrose, fasciculate-tomentose scales, smoke-colour. Gills adnexed, crowded, at first ascending, yellow then olive. Odour scarcely evident. (Fries.)

Inocybe calamistrata. Fr.

Pileus 1–2½ in. across, flesh thin, campanulate, obtuse, margin incurved at first, often wavy, at length almost plane, everywhere brown and with squarrose scales; gills adnexed, separating from the stem, crowded, broad, white then ferruginous, edge distinctly serrulate and whitish; stem solid, rigid, tough, 2 in. long, 2 lines thick, equal, rather rooting, fuscous, dark blue at the base, everywhere covered with rigid, recurved scales; spores somewhat reniform, smooth, 10–11 × 5 μ.

Agaricus (*Inocybe*) *calamistratus*, Fries, Epicr., p. 171; Cke., Illustr., pl. 150; Cke., Hdbk., p. 106.

In pine woods.

Smell strong. Brown or umber, base of stem dark blue, gills becoming ferruginous, and flesh tinged red, stamp the present species amongst its allies.

Inocybe hirsuta. Lasch.

Pileus ½–1 in. across, flesh thin, conico-campanulate, umbonate, brown, covered with squarrose, fasciculate pilose scales, becoming ochraceous, fibrillose towards the fimbriate margin; gills adnexed, ascending, crowded, thin, narrow, pallid then brownish, margin white, minutely toothed; stem solid, slender, tough, 2–3 in. long, about 1 line thick, fibrillose, floccosely scaly (not squarrose) at the apex, base slightly thickened, dark green.

Agaricus (*Inocybe*) *hirsutus*, Lasch, No. 577; Fries, Epicr., p. 171; Cke., Hdbk., p. 150.

Damp places in woods, pastures, &c.

Distinguished from its allies by the green base of the stem, and by the gills becoming fuscous. (Fries.)

The disc of the pileus is sometimes greenish.

Inocybe lanuginosa. Bull.

Pileus ½–¾ in. across, flesh rather thick, hemispherical then expanded, obtuse, minutely floccosely scaly, the scales of the disc erect and squarrose, umber then yellowish; gills narrowed behind, slightly adnexed, separating from the stem, more or less ventricose, thin, about 1 line broad, margin slightly toothed, pallid; stem about 1 in. long, 1 line thick, fibrillosely scaly, apex powdered with white meal, solid, paler than the pileus; spores elliptic-fusiform, smooth, $8 \times 4\ \mu$.

Agaricus lanuginosus, Bulliard, t. 370; Cke., Hdbk., p. 150; Cke., Illustr., pl. 582A.

Agaricus flocculentus, Cke., Hdbk., Ed. i. No. 317.

On the ground.

Pileus umber, becoming yellowish; smell weak.

Inocybe dulcamara. A. & S.

Pileus 1–2 in. across, flesh thin, campanulate then convex, at length expanded, umbonate, fuscous-olive, floccosely scaly, silky towards the margin; gills arcuato-adnexed, ventricose, crowded, pallid then olive; stem imperfectly hollow, fibrillose from the cortina or partial veil, adpressedly scaly, paler than the pileus, apex mealy; spores elliptical, smooth, $8–10 \times 5\ \mu$.

Agaricus (Inocybe) dulcamarus, Alb. & Schw., n. 489; Fries, Hym. Eur., p. 288; Cke., Hdbk., p. 151; Cke., Illustr., pl. 582B.

In pine woods, &c. Gregarious, small, olive-fuscous, flesh yellowish-white. In early specimens the scales of the pileus are squarrose; in autumnal forms adpressed.

Inocybe plumosa. Bolton.

Pileus 1–1½ in. across, convex then expanded, disc squarrose with erect fasciculate fibrils, margin fibrillose, mouse-brown; gills slightly rounded behind, adnexed, scarcely crowded, rather ventricose, smoky-white, margin entire; stem 1½–3

in. long, 1½ line thick, flexuous, floccosely scaly, coloured like the stem, apex naked (not mealy or pruinose), stuffed then hollow.

Agaricus plumosus, Bolton, t. 33; Cke., Hdbk. p. 151; Cke., Illustr., pl. 425A.

In damp pine woods, &c. Pileus thickly covered with little, erect, downy tufts; not yellowish nor tinged red inside.

Inocybe cincinnata. Fr.

Pileus ½–1 in. across, flesh thin, convex then plane, commonly indistinctly umbonate, villosely scaly, brown; gills adnexed, attenuated behind, separating from the stem, ventricose, crowded, violet-brown; stem solid, tough, about 1½ in. long, 1–1½ line thick, equal, straight, fibrillosely scaly, brownish-violet, spores irregular, nodulose, 7–8 μ diam.

Agaricus (Inocybe) cincinnatus, Fries, Epicr., p. 172; Cke., Hdbk., p. 151; Cke., Illustr., pl. 425B.

In woods, &c.

Inodorous. Slender, subgregarious. Distinguished from every other species by the brownish-violet gills. (Fries.)

Inocybe haemacta. Berk. & Cke.

Pileus about 1 in. across, fleshy, compact, campanulate, obtuse, floccosely fibrillose with dark fibrils, the disc rather scaly and darker; gills slightly rounded behind and adnate, pallid then dingy tan-colour; stem about 2 in. long, 3–4 lines thick, smooth, scarcely fibrillose, whitish above, tinged with verdegris green at the base, nearly equal, solid; spores elliptical, smooth, 8×4–5 μ; flesh everywhere turning blood-red when touched or wounded.

Agaricus (Inocybe) haemactus, Berk. & Cke., Grev., xi. p. 70; Cke., Illustr., pl. 390.

On lawns, &c.

Pileus about an inch broad, umber, margin pallid, clad with long, darker fibrils, the obtuse disc darkest, and somewhat scaly; stem nearly 2 in. long, 3–4 lines thick, aeruginous at the base, the colour penetrating through the flesh. Everywhere slowly changing to blood-red when wounded. In some respects agreeing with *I. calamistrata*, but not squarrose. (Berk. & Cooke.)

** LACERI.

Inocybe pyriodora. Pers.

Pileus 2–3 across, disc fleshy, the remainder thin, ovate then campanulate, obtuse, disc very scaly, the rest everywhere torn into fibrils, smoky or ochraceo-pallid, reddish when young; margin often incurved and wavy; flesh becoming reddish; gills at first adnate, then somewhat emarginate, crowded, thin, linear, often crisped, at first whitish then brownish, margin whitish; stem 3–6 in. long, ½–1 in. thick, almost equal, or attenuated at the base, often curved, externally very fibrilloso, pallid, apex powdered with white meal, solid, internally fibrous and soft, reddish; fragile; spores pip-shaped, smooth, 10 × 6 μ.

Agaricus (Inocybe) pyriodorus, Pers., Syn., p. 300; Cke., Hdbk., p. 152; Cke., Illustr., pl. 472.

In woods.

Smell pleasant, resembling pears or violets. Pileus fuscous, then pallid ochraceous, flesh with a red tinge. (Fries.)

Pileus 1½–3 in. broad, broadly and strongly umbonate, the margin at length a little turned up, fibrilloso-squamulose; fleshy, pallid umber. Gills adnexed, ventricose, pale. Stem 2–3 in. high, 4 lines thick (solid in my specimens and in Bulliard's figure), fibrillose, white, when bruised somewhat of the same hue as the pileus. Veil very fugacious. Odour penetrating, like that of rotten pears or *Hyacinthus racemosus*. (Berk.)

Inocybe incarnata. Bres.

Pileus 2–3 in. across, flesh rather thick, convex, campanulated, then expanded and gibbous or broadly umbonate, fibrillose then squamulose, margin fimbriate, yellowish then rufescent or tinged with flesh-colour; stem solid, about 2 in. long, 4–5 lines thick, attenuated and somewhat rooting at the base, rather fibrillose, rosy flesh-colour, white and mealy at the apex; flesh of the pileus white, becoming deep red when broken; gills sinuate, adnexed, crowded, broad, rather fringed at the margin; whitish then greyish-cinnamon, at length spotted with red, or wholly rufescent; spores elliptic-ovate, 10 × 6 μ.

Agaricus (Inocybe) incarnatus, Bresadola, Fung. Trident., t. 53; Cke., Illustr., pl. 473.

In woods.

Smell resembling pears, strong and persistent. Stem more robust than in *I. pyriodora*, which the present species resembles in habit and smell.

Inocybe scaber. Fr. (figs. 11–13, p. 3.)

Pileus 1–1½ in across, flesh rather thick, firm, white, not tinged with red, conico-convex, obsoletely gibbous, smoky or pallid-tan, variegated with spot-like, fibrous, adpressed, brownish scales; gills slightly adnexed, thin, crowded, whitish then smoky; stem solid, firm, 1½ in. long, 3–5 lines thick, equal, white, silky-fibrillose; spores elliptical, smooth, 11 × 5 μ.

Agaricus (Inocybe) scaber, Fries, Epicr., p. 172; Cke., Hdbk., p. 152; Cke., Illustr., pl. 391.

In woods.

Stature short, resembling *I. sambucina*, the last named differs, however, in the white, smooth pileus. More robust than allied species.

Var. **firma.** Fries, Hym. Eur., p. 229. Pileus fuscous-tan, spotted with fuscous scales; stem velvety.

Pileus ½–1 in. broad, campanulate, subumbonate, dingy greyish-brown, scaly. Gills pale dingy-brown, rather numerous, nearly free, stem 1–1½ in. high, 2–3 lines thick, solid, whitish, fibrillose, furnished with a bark-like external coat, sometimes subgregarious. (Grev.)

Inocybe maritima. Fr.

Pileus about 1 in. across, fleshy, rather soft, convex then expanded, obtusely umbonate, fibrillose, more or less adpressedly scaly, brown or mouse-colour, hygrophanous, hoary when dry; flesh greyish-brown; gills rounded behind, adnexed, partly separating from the stem with age, ventricose, brownish-grey then ferruginous; stem solid, about 1 in. long, 2–3 lines thick, equal, fibrillose, at first cortinate, a little paler than the pileus, apex not pulverulent; spores irregular, nodulose, 9–10 μ diam.

Agaricus (Inocybe) maritimus, Fries, Epicr., p. 172; Cke., Hdbk., p. 152; Cke., Illustr., pl. 392,

Amongst damp sand on the sea shore, also in woods.

Every part almost the same colour; distinguished from the remainder by the hygrophanous pileus. Smell weak. (Fries.)

Inocybe violacea-fusca. Cke. & Mass.

Subcaespitose. Pileus 1–2 in. across, more or less convex then expanded, obtusely umbonate, flocculose, fibrillose, concentrically scaly, dry, umber, margin thin, torn and fimbriate; flesh thin; gills adnexed, rounded behind, or slightly sinuate, 2 lines and more broad, scarcely crowded, violet then umber, margin paler, serrulate; stem 2–2½ in. long, ¼ in. thick, equal, smooth and silky, violet above both outside and inside, pallid below, solid, flesh pallid when old; spores elliptical, smooth, 7–8 × 4 μ.

Agaricus (*Inocybe*) *violaceo-fuscus*, Cke. & Massee, Grevillea, xvii., p. 52; Cke., Illustr., pl. 1174.

Among grass in open places.

Distinguished by the violet colour of the gills and apex of the stem. There is often a tinge of violet in the pileus, and the scales darker than the ground-colour.

Inocybe lacera. Fr.

Pileus 1–1½ in. across, flesh thin except at the disc, convex then expanded, obtusely umbonate, fibrillosely scaly, mouse-colour, becoming pale and yellowish; gills adnexed, 2 lines broad, ventricose, pale rufous then mouse-colour; stem about 1½ in. long, 1½ line thick, apex naked, stuffed, paler than the pileus, reddish inside; spores obliquely elliptical, smooth, 12 × 6 μ.

Agaricus (*Inocybe*) *lacerus*, Fries, Syst. Myc., i. p. 257; Cke., Hdbk., p. 153; Cke., Illustr., pl. 583.

In woods, &c.

Very variable, but the stem never mealy at the apex, 1½–2 in. long, 1–2 lines thick, pileus almost smooth at first, soon scaly, at length squarrose, mouse-colour, becoming pale and yellowish; smell slight. (Fries.)

Distinguished from *I. scabra* and *I. mutica* by the inside of the stem becoming reddish.

Inocybe fasciata. Cke. & Mass.

Caespitose. Pileus 2–3 in. across, campanulate-convex,

silky and covered with minute dark, squarrose scales, disc rufous, remainder pale tan-colour; gills adnexed, rounded or sinuate behind, attenuated in front; crowded, 1½–2 lines broad, thin, soft, pallid; stem 2–3 in. long, 2–3 lines thick, equal or a little thinner downwards, fibrillose, reddish within and without at the base, pallid above, solid, spores elliptical, minutely rough, 10 × 6μ.

Agaricus (Inocybe) fasciatus, Cke. & Mass., Grevillea, xvii., p. 52; Cke., Illustr., pl. 1173.

On the ground among grass.

Densely caespitose, a character by which it is at once distinguished among the species of *Inocybe*. Taste and smell none.

Inocybe flocculosa. Berk.

Pileus ½–1 in. across, flesh thin, subcampanulate, umbonate, silky-squamulose, tawny-brown; gills adnate, pale fawn-colour then ferruginous, ventricose, 1–1½ line broad; stem about 1½ in. long, 1–1½ line thick, fibrillose, pale reddish, squamulosely pulverulent above, imperfectly hollow; spores elliptical, smooth, 10 × 5–6 μ.

Agaricus (Inocybe) flocculosus, Berk., Engl. Fl., vol. v. p. 97; Cke., Illustr., pl. 393.

On naked soil, also among grass.

Odour like that of new meal, but nauseous. Among grass the pileus is smoother, more tawny, rimoso-sericeous; gills not arcuate behind, but broadly adnate. (Berk.)

Inocybe Bongardii. Weinm.

Pileus 1–2 in. across, campanulate, obtuse, disc scaly, torn into fibrils at the margin, but not cracked, fuscous when moist, pallid when dry; flesh thin, reddish; gills adnexed, ventricose, broad, a little crowded, pale red then cinnamon; stem solid, rigid, 2–4 in. long, 2 lines thick, equal or slightly bulbous at the base, fibrillose, reddish-white, silky and red below, apex with white meal; veil absent; spores elliptical, smooth, 10–12 × 6 μ.

Agaricus (Inocybe) Bongardii, Weinm., p. 190; Cke., Hdbk., p. 153; Cke., Illustr., pl. 381.

In pine woods, &c.

Smell pleasant, exactly resembling pears. (Fries.)

Smell like Bergamot. (Weinm.)

Inocybe mutica. Fr.

Pileus 1–2 in. across, flesh rather thick, convex then plane, always very obtuse, at length more or less depressed at the centre, somewhat scaly, dry, whitish, fibrils brownish; gills entirely adnate, thin, crowded, white then tinged brown; stem, 1½–2 in. long, 3–4 lines thick, attenuated downwards, fibrillose, pale straw-colour then tinged with brown, hollow; spores elliptical, smooth, 8 × 5 μ.

Agaricus (Inocybe) muticus, Fries, Monogr., ii. p. 346; Cke., Illustr., pl. 382; Cke., Hdbk., p. 153.

In woods, by road-sides, &c.

I. lacera differs from the present in the slightly adnate gills, and the mouse-coloured pileus, *I. scabra* differs in the adnexed gills, and the stouter stem with a slight swelling at the base.

Inocybe carpta. Fr.

Pileus about 1 in. across, flesh rather thick, convex then expanded and often umbilicate or depressed, dingy brown, covered with fibrillose, more or less squarrose squamules; gills slightly adnexed, 1½ line broad, ventricose, brownish; stem 1–2 in. long, 2 lines thick, very slightly attenuated downwards, *with spreading fibrillose woolliness, paler than* the pileus, hollow; spores, elliptical, even, 8–10 × 5 μ.

Agaricus (Inocybe) carptus, Fries, Epicr., p. 173; Cke., Hdbk., p. 154; Cke., Illustr., pl. 426B; (not of Bresadola).

In woods.

Distinguished by the dark brown pileus and stem being everywhere covered with more or less spreading fibrils. There is a slenderer form; pileus ½ in. across, stem about 1 in. long, 1 line thick, wavy. Cke., Illustr., pl. 426A.

Inocybe deglubens. Fr.

Pileus about 1 in. across, flesh thin, white, convex then expanded, obtusely umbonate, the cuticle becoming torn into adpressed fibrils, disc somewhat scaly, rufous-bay, then yellowish, scales darker; gills adnate, ventricose, rather distant, dingy then cinnamon; stem 2–2½ in. long, 2 lines thick, adpressedly fibrillose, pallid, apex with dark scurf-like markings, equal, solid; spores elliptical, smooth, 10 × 6 μ.

Agaricus (Inocybe) deglubens, Fries, Epicr., p. 173; Cke., Illustr., pl. 394.

On the ground in pine woods, &c.

The size of *I. lacera*, but quite distinct in the scurfiness or minute points at apex of stem, which is not white. Pileus bay with a rufous tinge, split up into darker fibrous scales. (Fries.)

Inocybe obscura. Pers.

Pileus ⅝–1 in. across, flesh thin, campanulate then plane, umbonate, radially fibrillose, disc scaly, blue then brownish: gills uncinately adnexed, crowded, ventricose, olive then brownish, 1½ line broad; stem 1–2 in. long, 1–2 lines thick, stuffed, fibrillose, violet then brownish; spores elliptical, smooth, 9–10 × 5–6 μ.

Agaricus (Inocybe) obscurus, Pers., Syn., p. 347; Cke., Illustr., pl. 427; Cke., Hdbk., p. 154.

In damp places in pine woods, &c.

Readily distinguished amongst its allies by the blue or violet tinge on the pileus and stem.

Var. **rufus**, Pat. tab. Anal., n. 543; pileus brownish-rufous, gills ventricose, violet; spores elliptical, apiculate.

Inocybe echinata. Roth.

Pileus 1–2 in. across, flesh rather thick, campanulate then expanded, obtuse, at first pulverulent then scaly, dry, dingy brownish-yellow; gills almost or quite free, crowded, 1½–2 lines broad, deep pink or blood-red; stem 1½–2 in. long, 2 lines thick nearly equal, floccosely pulverulent below the imperfect, zone-like ring, red, hollow; flesh, like that of the pileus, red; spores pale yellow with a red tinge, elliptical, smooth, 5 × 3 μ.

Agaricus echinatus, Roth., Catal., ii. t. 9, f. 1; Cke., Hdbk., p. 154; Cke., Illustr., pl. 395.

Agaricus Hookeri, Klotzsch, Engl. Flora, vol. v. p. 97.

Agaricus haematophyllus, Berk., Mag. Zool. & Bot., t. 15, f. 1.

On peat-beds in gardens and conservatories.

In all probability an introduced species, and, as the synonyms show, has been repeatedly described, readily known by the dingy scaly pileus, and the more or less intense red gills, stem, and flesh.

Pileus 5–8 lines broad, fawn-coloured, centre umber. Gills 1–1½ lines broad, beautiful purple, at length cinnamon.

Veil floccoso-fibrillose, very fugacious, stem 1–1½ in. high, ½ a line thick, fistulose, shining purple, pruinose with fawn-coloured meal. In a flower-pot. (Klotzsch.)

*** RIMOSI.

Inocybe schista. Cke. & Sm.

Pileus 2–3 in. across, campanulate, broadly subumbonate, flesh thin, equal, dingy like that of the stem, cracking longitudinally, rather fibrillose, bay-brown; gills adnate with a decurrent tooth, rather ventricose, 3 lines broad, tawny-rufous at maturity, margin pale, serrate; stem about 3 in. long, 5–6 lines thick, equal, twisted, paler than the pileus, solid.

Agaricus (*Inocybe*) *schistus*, Cooke & Smith; Cke., Hdbk., p. 154; Cke., Illustr., pl. 504.

On a lawn.

Distinguished by its large size, thick, twisted stem, and broad gills as bright in colour as those of a *Flammula*. It is a pity that the colour of the spores was not noted, as the colour of the gills suggests other than the genus *Inocybe*, although the longitudinally fibrillose cracking pileus agrees with the present genus.

Inocybe fibrosa. Sow.

Pileus about 4 in. across, flesh very thick at the disc, and 2–3 lines thick nearly up to the margin, white, somewhat campanulate with a broad, obtuse umbo, silky, even, at length cracked, margin wavy, cracked, pale, yellowish-brown; gills free, crowded, 3–4 lines broad, narrower behind, very pale dingy ochre, margin uneven; spores elliptical, minutely warted or rough, 12–14 × 6 μ; stem 4–5 in. long, 1 in. thick at the base, attenuated upwards, striate, flocculosely scaly above, pale, solid.

Agaricus fibrosus, Sowerby, Fungi, t. 414; Cke., Hdbk., p. 155; Cke., Illustr., t. 454 (after Sowerby).

In fir woods.

The figure in "Illustrations" is reproduced from Sowerby's original drawing, which is somewhat different in colouring from his published plate. (Cooke.)

Our largest species of *Inocybe*, *Ino.* *perlata*, which approaches the present species in size, differs in the darker pileus and smooth spores.

Inocybe phaeocephala. Bull.?

Pileus 1–2 in. across, subcampanulate, rarely flattened and umbonate, fuliginous, becoming brownish, smooth; gills free, semilunate, very broad, yellowish bistre colour; stem 2–3 in. long, 2–3 lines thick, equal except the swollen base, naked, straight, grey with brownish lines, white at the base, solid; spores elliptical, smooth, 6 × 4 μ.

Agaricus (Inocybe) phaeocephalus, Cke., Hdbk., p. 155; Cke., Illustr., pl. 396.

Agaricus phaeocephalus, Bulliard, Champ. Fr., t. 555, f. 1.

On the ground in pine woods.

Pileus 2–4 in. broad; stem 3–5 in. high, 4–7 lines thick. The spores are bright ferruginous red. (Cooke.)

There appears to be a considerable difference of opinion as to what Bulliard's figure really is, the above description represents Dr. Cooke's view, the description being drawn up from specimens found in pine woods in Scotland.

Inocybe fastigiata. Schaeff.

Pileus 1½–2 in. across, 1 in. high, fleshy at the disc, conical then campanulate, margin incurved when young, then wavy, but sometimes regular, acute, longitudinally fibrillose and cracked, rarely adpressedly squamulose, yellow-brown, sometimes brownish; gills free, ventricose, crowded, rather thick, 2 lines or more broad, yellow then olivaceous; stem 3–4 in. long, up to ⅓ in. thick, equal or slightly attenuated at both ends, silkily fibrous or flocculose, apex almost naked, pallid, solid, flesh fibrous, not rigid; spores subglobose, distinctly nodulose, 8–10 × 6–8 μ; cystidia numerous, large.

Agaricus fastigiatus, Schaeff., t. 26; Cke., Illustr., pl. 383 (spores wrong shape); Cke., Hdbk., p. 155.

Among grass, &c.

Somewhat resembling *I. pyriodora* in size and appearance, the latter, however, is at once known by the smooth, pip-shaped spores, and the flesh becoming reddish when broken.

Inocybe hiulca. Fr.

Pileus 1–2 in. across, flesh very thin except at the fleshy,

prominent umbo, at first conical then expanded, everywhere adpressedly squamulose or fibrillose, cracked, brownish then with an olive tinge; stem 2–3 in. long, 2–3 lines thick, equal or the extreme base slightly bulbous, rather firm, adpressedly fibrillose, apex squamulosely mealy, pallid, but becoming reddish when bruised, white then reddish inside, stuffed; gills almost free, with a slender decurrent line on the stem, soon ventricose behind, 2 lines broad, thick, rather distant and rigid, whitish flesh-colour, darker at the base, olive when adult; spores elliptical, smooth, 8–10 × 5 μ.

Agaricus (Inocybe) hiulcus, Fries, Epicr., p. 175; Cke., Hdbk., p. 155; Cke., Illustr., pl. 397.

On the ground, in pine woods, &c.

Smell obsolete; stem somewhat curved, equal, base slightly bulbous; pileus fuscous, then tinged olive. (Fries.)

Inocybe Curreyi. Berk.

Pileus 1½–2 in. across, convex then expanded, obtuse, longitudinally fibrillose, slightly squamulose at the disc only, slightly cracked, pale yellowish-brown; flesh very thin; gills quite free, 2 lines or more broad, yellowish then with an olive tinge; stem 2–3 in. long, 3 lines thick, slightly attenuated upwards, minutely fibrillose, colour of the pileus, or a little paler, solid, flesh dingy; spores elliptical, smooth, 11 × 6 μ.

Agaricus (Inocybe) Curreyi, Berk., Outl., p. 155; Cke., Illustr., pl. 398.

In woods, &c.

Distinguished from *I. pyriodora* by the absence of smell; from *I. fastigiata* by the smooth spores; and from *I. rimosa* by the stem not being mealy at the apex, and by the squamules at the disc.

Inocybe perlata. Cooke.

Pileus 3–4 in. across, convex then expanded, broadly umbonate, longitudinally fibrous, with darker fibrils, fuscous, margin paler, incurved, disc dark bistre, nearly black; flesh whitish, thick at the disc, remainder equal up to the margin, about 1 line thick; gills adnexed, rounded behind, 3 lines broad, pallid then pale umber; stem 3–4 lines long, ½–¾ in. thick, straight or curved, sometimes twisted, striate, pallid

and mealy above, dark below when old, solid, flesh dirty-white; spores broadly elliptical, smooth, 8–9 × 6 μ.

Agaricus (*Inocybe*) *perlatus*, Cooke, Grev., xv. p. 40; Cke., Illustr., pl. 961.

Under trees.

Recognised amongst our species of *Inocybe* by its large size; differs from *I. fibrosa* by the dark pileus and base of stem, and from *I. schistus* by the flesh of the pileus not cracking longitudinally, and the dingy umber gills.

Inocybe rimosa. Bull.

Pileus 1–2 in. across, flesh thin, white, campanulate with an indication of an umbo, silky-fibrous, the cuticle splitting longitudinally, yellowish-brown; gills almost free, rather crowded, somewhat ventricose, pale dingy tan-colour; stem 2–3 in. long, equal, not incrassated at the base, firm, nearly smooth, whitish, mealy above, solid; spores elliptical, smooth, 10–11 × 5 μ.

Agaricus rimosus, Bull., Champ., t. 388; Cke., Hdbk., p. 156; Cke., Illustr., pl. 384.

On the ground in woods, &c.

Most closely allied to *I. asterospora*, with which it was at one time confounded, but differs in the smooth elliptical spores. *I. eutheles* differs in the distinct umbo, adnate gills, and in growing under firs. *I. pyriodorus* is distinguished by being altogether stouter, and in the strong pear-like smell.

Inocybe asterospora. Quel. (fig. 14, p. 3.)

Pileus 1–2 in. across, campanulate, somewhat umbonate, silkily fibrous and the cuticle cracked longitudinally, dry, yellowish-brown or sometimes almost umber, especially at the disc; flesh thin, whitish; gills almost free, rather close, 2 lines broad, ventricose, dingy tan; stem 2–3 in. long, about 3 lines thick, equal, slightly subbulbous at the base, pallid, often with a pinkish tinge, solid; spores subglobose, coarsely warted, 10–11 μ diameter.

Agaricus (*Inocybe*) *asterosporus*, Quelet, Bull. Soc. Bot. France, xxvi. p. 50; Cke., Hdbk., p. 156; Cke., Illustr., pl. 385.

On the ground in woods.

Closely resembling *I. rimosa*, with which it was confounded

so long as that species was defined by superficial characters, but readily known by the globose, coarsely warted, or star-like spores; the swollen base of the stem is also characteristic.

Inocybe eutheles. B. & Br.

Pileus 1–2 in. across, campanulate then expanded and undulate, umbo prominent, shining, silky, rather squamulose, fawn-coloured; gills broadly adnate, about 1 line broad, pallid, margin whitish, minutely toothed; stem 2–3 in. long, 2 lines thick, equal, very slightly swoollen at the very base, striate, fibrous, pallid, solid; spores elliptical, smooth, 10–11 × 5 μ.

Agaricus (*Inocybe*) *eutheles*, Berk. & Broome, Ann. Nat. Hist., 1865, pl. viii. fig. 2; Cke., Illustr., pl. 386.

On the ground among fir leaves, &c.

Smell of meal. Superficially resembling several other species of *Inocybe*, from which it is distinguished by the following combined features:—prominent umbo, broadly adnate narrow gills, and smooth, elliptical spores.

Smell farinaceous, rather disagreeable; spores even, sub-elliptic, ·00029 in. long. It differs from *A. fastigiatus* in the adnate gills, smooth, not rough spores: and from *A. Curreyi*, with which it agrees as to the spores, in its strongly umbonate pileus, nearly equal stem, and adnate gills. (B. & Br.)

Inocybe margaritispora. Berk.

Pileus 1½–2 in. across, campanulate then expanded, undulating, broadly umbonate, silky, clad with adpressed fibrillose scales, fawn-colour; gills adnexed, about 2 lines broad, pallid; stem 3–4 in. long, 3 lines thick, equal, fibrillose, pallid, solid; spores subglobose; coarsely wartred 8 μ diam.

Agaricus (*Inocybe*) *margaritispora*, Berk., MS.; Cooke, Hdbk., p. 157; Cooke, Illustr., pl. 505.

On the ground.

Resembling *I. eutheles*, but usually rather larger, differing principally in the warted subglobose spores. (Cooke.)

In Cooke's figures the pileus is pale yellow-brown. Resembling *I. asterospora* in the spores, but differing in the longer stem and squamulose pileus.

o 2

Inocybe destricta. Fr.

Pileus 1½–2½ in. across, flesh thin, white; campanulato-convex then expanded, umbonate, at length depressed round the brownish umbo, cracked, fibrillose, then torn into squamules, pallid then rufescent; gills uncinately adnate, crowded, thin, 2 lines broad, white then greyish-cinnamon; stem solid, soft, about 2 in. long, 2–3 lines thick, almost equal, glabrous, fibrillosely striate, white with a red tinge, apex slightly mealy; spores elliptical, smooth, 8 × 4 μ.

Agaricus (*Inocybe*) *destrictus*, Fries, Epicr., p. 172; Cooke, Hdbk., p. 157; Cooke, Illustr., pl. 387.

In pine woods, &c.

Smell unpleasant. Distinguished from *I. rimosa* by the adnexed gills and the stem becoming reddish with age. *I. asterospora* is known from the present species by the nodulose, irregular spores.

Inocybe perbrevis. Weinm.

Pileus about 1 in. across, rather fleshy, convex, obtusely umbonate, then expanded and often depressed round the umbo, fibrosely squamulose or silky, rufous-brown then paler and yellowish, margin somewhat striate and at length splitting; gills adnexed with a slight decurrent tooth, rather distant, 1½ line broad, brownish-white then tan-colour; stem not more than 1 in. long, 2 lines thick at the apex, slightly attenuated towards the base, pallid, whitish fibrillose, stuffed; spores elliptical, smooth, 10–12 × 5 μ.

Agaricus perbrevis, Weinm, p. 185; Cooke, Illustr., pl. 519; Cooke. Hdbk., p. 157.

In woods.

Small, but rather firm, reddish-brown then becoming yellowish; stem paler, apex mealy, attenuated downwards. Resembling in habit and colour some of the small species of *Lactarius*.

Inocybe descissa. Fr.

Pileus up to 1 in. across, flesh thin except at the disc, conical then campanulatus, fibrillose, becoming radiately cracked and splitting when expanded, whitish or pallid yellow-brown, margin often striate; gills almost free, crowded, thin, pallid then brownish; stem 1–1½ in. long,

about 2 lines thick, equal, undulate, rather fibrillose, apex with white powder, white both outside and inside; spores elliptical, smooth, 8 × 4–5 μ.

Agaricus (Inocybe) descissus, Fries, Epicr., p. 174; Cooke, Hdbk., p. 157.

In woods.

Slenderer than *I. geophylla*, which the present species somewhat resembles; stem white outside and inside; pileus brownish-white, margin often striate. (Fries.)

Var. **auricomus**, Batsch. Smaller and more slender than the typical form, margin striate, becoming yellowish; stem hollow; gills adnexed, ventricose, brownish-white.

In woods, &c.

Requires to be carefully distinguished from yellowish forms of *I. geophylla*. Pileus cracked. (Fries.)

Inocybe Trinii. Weinm.

Pileus ½–⅔ in. across, flesh very thin except at the disc, hemispherical, obtuse, whitish with a rufous tinge, with longitudinal rufous fibrils, tawny when dry; gills adnexed, rounded behind, about 1 line broad, ventricose, cinnamon, edge white, floccose; stem 1–1½ in. long, about 1 line thick, with loose rufous fibrils, powdered with white meal; spores subglobose, coarsely warted, 9–10 μ diam.

Agaricus (Inocybe) Trinii, Weinm., Ross., p. 194; Cooke, Illustr., pl. 428B.

Among grass.

Smell like clove-pinks. Leaning on one side; pileus scarcely rimose; not squamose, ½ in broad, whitish-rufous, tawny when dry. (Fries.)

**** VELUTINI.

Inocybe sambucina. Fr.

Pileus 2–3 in. across, flesh white rather thick, firm; convex then expanded, often wavy, not incurved, obtuse, silky-fibrillose, even, white, rarely pallid-yellowish; gills slightly adnexed, crowded, ventricose, 2–3 lines broad, whitish; stem solid, stout, 1–1½ in. long, ½–1 in. thick, equal or clavate, often decumbent, striate, glabrous, white, apex

indistinctly mealy; veil absent; spores elliptical, smooth, 11–12 × 6 μ.

Agaricus (*Inocybe*) *sambucinus*, Fries, Epicr., p. 175; Cooke, Hdbk., p. 158; Cooke, Illustr., pl. 399.

Amongst grass, &c.

Solitary, compact, stout, smell strong. Pileus white, often wavy, margin not cracked nor splitting, becoming tinged with yellow. Stem stout, often decumbent; apex sparingly pruinose. (Fries.)

Inocybe caesariata. Fr.

Pileus ⅔–1½ in. across, disc fleshy, remainder thin, convex then expanded, somewhat gibbous, tawny-ochraceous, with ochraceous fibrillose, more or less spreading squamules; gills rounded behind and adnexed, pale ochraceous, margin quite entire; stem 1½–3 in. long, 2–3 lines thick, equal, very fibrillose, pale ochraceous, solid; spores elliptical, smooth, 8 × 4 μ.

Agaricus (*Inocybe*) *caesariatus*, Fries, Hym. Eur., p. 234; Cooke, Illustr., pl. 338.

In beech woods, &c.

The ochraceous colour and copious fibrils readily distinguish this species. (Fries.)

Inocybe lucifuga. Fr.

Pileus about 1 in. across, thin, convex then plane, umbonate, covered with minute, adpressed scales, or often longitudinally fibrillose, somewhat olive, sometimes pale, rarely fawn-colour; flesh white; gills nearly free, or depending on the variable form of the pileus, adnexed, crowded, ventricose, plane, whitish, soon yellowish, at length pure olive; stem solid, rigid, about 1½ in. long and 2 lines thick, equal, often undulated, hardly fibrillose, apex with a scanty covering of white meal, pallid; spores elliptical, smooth, 10 × 6 μ.

Agaricus (*Inocybe*) *lucifugus*, Fries, Epicr., p. 177; Cke., Hdbk., p. 158; Cke., Illustr., pl. 429A.

In pine woods, &c.

Smell unpleasant, something like radishes. Distinguished by the clear olive colour of the gills, and the absence of a veil.

Inocybe sindonia. Fr.

Pileus 1½–2 in. across, flesh thin, white, campanulato-onvex, gibbous silky-velvety, even, when young having the .brils of the veil appendiculate from the margin, dingy vhite or at length yellowish; gills narrowly adnexed, linear-anceolate, 1 line broad, brownish-white; stem soft, filled vith a distinct pith when young, then hollow, 2–3 in. long, lines thick, equal, at first slightly fibrillose from the veil, hen becoming glabrous, white; spores elliptical, smooth, × 4 μ.

Agaricus (Inocybe) sindonius, Fries, Epicr., p. 176; Cke., Hdbk., p. 159; Cke., Illustr., pl. 400.

In damp, shady places.

Allied to *I. geophylla*, but known by the hollow stem and arger size. Pileus not fibrillose.

Inocybe Clarkii. B. & Br.

Pileus ¾–1½ in. across, flesh very thin except at the umbo, vhite; campanulate, obtuse, whitish, silky; gills adnexed, ather distant, 1½–2 lines broad, thin, pallid, margin white; tem 1½–2 in. long, 2–3 lines thick, equal or slightly hickened at the base, white, solid; spores pale, elliptical, mooth, 8–10 × 6 μ.

Agaricus (Inocybe) Clarkii, B. & Br., Ann. Nat. Hist., n. 345; Cke., Hdbk., p. 159; Cke., Illustr., pl. 429B.

On the ground in shady places.

Distinguished by the white, silky, campanulate pileus. Allied to *I. sindonia*, but distinguished by the hollow stem nd persistently pale gills.

Inocybe geophylla. Fr.

Pileus ½–1 in. across, flesh thin, white, conical then ex-panded, umbonate, dry, silky, the cuticle breaking up into ongitudinal silky fibrils, white, lilac, or violet; white or ellowish when old; gills almost free, rather broad, ven-ricose, crowded, white then brownish-tan, at length brown; tem stuffed, rather firm, 2–3 in. long, 3 lines thick, equal, ommonly straight, glabrous, white or coloured like the ileus, apex with white meal; spores elliptical, smooth, –8 × 4 μ.

Agaricus (Inocybe) geophyllus, Fries, Epicr., p. 176; Cke., Hdbk., p. 159; Cke., Illustr., pl. 401.

Amongst grass in woods, &c.

Gregarious, smell weak; more slender than *I. sindonia*; known from *I. scabellus* by the white or lilac, not brownish and squamulose pileus.

Pileus ½–1 in. broad, umbonate, at length subinverted, white, lilac, brownish, yellowish, &c., satiny, often rimose. Gills adnate or adnexed, ventricose, earthy, not cinnamon, the margin white, subdentate. Stem 1–3 in. high, 1–2 lines thick, flexuous, equal or subbulbous, firm, very minutely farinaceous above, solid, but the inner substance less compact. Odour strong and disagreeable. (Berk.)

Inocybe scabella. Fr.

Pileus about 1 in. across, conical then expanded, umbonate, silky-fibrillose, at length becoming torn into squamules except the umbo, brownish, rufous-brown, sometimes dingy ochraceous, flesh dingy; gills adnexed, somewhat ventricose, but at times narrow, more or less crowded, dingy at first then brownish; stem stuffed, thin, 1½ in. long, ½–1½ line thick, equal, straight or flexuous, glabrous, rufous or pallid, apex obsoletely pruinose; veil not evident; spores irregular, nodulose, 10 × 7 μ.

Agaricus (Inocybe) scabellus, Fries, Epicr., p. 127 (not of Alb. & Schw.); Cke., Hdbk., p. 159.

Grassy places in woods, &c.

A very variable, but quite distinct species. Stature of *I. geophylla* but more slender, inodorous, and brown or rufescent, colour of pileus and stem different.

Inocybe subrimosa. Mass.

Pileus about 1 in. across, conico-campanulate then expanded, with a prominent conical umbo, margin often undulate, even, glabrous, the cuticle becoming broken up into longitudinal fibrils, then cracked, bay or pale rusty-ochraceous; gills very much attenuated behind, free or slightly adnexed, rather ventricose, white then pale dingy-tan (colour of old wash-leather), at length brownish; basidia clavate, 30–42 × 14 μ; cystidia fusoid, apex at first minutely spiny, 65–95 × 20 μ; spores subglobose, unequally stellately spiny, tinged yellow, 13–14 × 10–11 μ; or 10–12 μ diam.; stem about 2 in. long, 1½ line thick, solid, equal, round,

polished, usually slightly flexuous, base with a very minute, more or less marginate bulb, glabrous, white, everywhere mealy, not pellucid.

Clypeus subrimosus, Karsten, Meddl. af Soc. pro Fauna et Flora Fennica, 1888–91, p. 38; Cke., Illustr., pl. 402 (called *Inocybe scabella.*)

Among grass.

Flesh white; inodorous and tasteless.

Inocybe Renneyi. B. & Br.

Pileus ½–¾ in. across, flesh very thin except at the disc, hemispherical, slightly fibrillose, disc brown, the remainder fawn-colour; gills rounded behind and almost free, 1 line broad, dingy ochraceous; stem 1½–2 in. long, 1½ line thick at the apex, slightly attenuated downwards, paler than the pileus, fibrillose, solid; spores pip-shaped, the narrow end slightly curved, rough, 12 × 7–8 μ.

Agaricus (*Inocybe*) *Renneyi*, Berk. & Br., Ann. Nat. Hist., n. 1761; Cke., Illustr., pl. 520A.

On the ground.

Var. **major**; coloured like the type form, but larger; pileus up to 1 in. across, campanulate; gills broadly adnate, cinnamon-colour, stem equal. Flesh dingy, as is also that of the typical form; spores pip-shaped, rough, 13–17 × 10 μ.

Cke., Illustr., pl. 520B.

In fir woods.

Inocybe trechispora. Berk.

Pileus ½–¾ in. across, somewhat membranaceous, convex then expanded, umbonate, at first viscid but soon dry and silky, umbo brownish, remainder whitish; stem 1½–2 in. long, 1½ in. thick, nearly equal, often slightly wavy, whitish, slightly striate and mealy, nearly solid; gills emarginate, rather distant, ventricose, pinkish-grey; spores irregularly nodulose, 7 × 5–6 μ; cystidia subfusiform, sometimes slightly toothed at the apex, 35–45 × 10 μ.

Agaricus (*Inocybe*) *trechisporus*, Berk., Outl., p. 156; t. 8, f. 6; Cke., Hdbk., p. 160; Cke., Illustr., pl. 403A.

In woods amongst ferns, &c.

Somewhat resembling *I. geophylla*, but distinguished by the dark umbo, and the nodulose spores.

Inocybe vatricosa. Fr.

Pileus about ½ in. across, flesh thin, convex then plane, obtusely umbonate, even, glabrous, viscid when moist, shining when dry, slightly silky near the margin, white; gills broadly emarginate, adnexed, almost free, broad, white then brownish; stem about 1 in. long, 1–2 lines thick, equal, curved and contorted, white, not fibrillose, but with white down at the base, everywhere powdered with white meal, hollow.

Agaricus (Inocybe) vatricosus, Fries, Epicr., p. 177; Cke., Hdbk., p. 160; Cke., Illustr., pl. 403B.

Damp naked places in pine woods, also on wood.

A minute species, remarkable for the glabrous viscid disc of the pileus, and the truly silky margin. With exactly the habit of *I. geophylla*, but smaller. (Fries.)

Inocybe Whitei. B. & Br.

Pileus up to 1 in. across, flesh very thin, except at the disc, at first hemispherical, then convex, tawny, margin whitish, at length expanded and wholly tawny, fibrillose, slightly viscid; veil white, fibrillose; stem about 1½ in. long, 1½ line thick, slightly thickened at the base, nearly smooth, white, becoming brownish, solid; gills adnexed, white at first then pallid; spores obliquely elliptical, smooth, pale yellow-brown, $9 \times 4 \mu$; cystidia more or less broadly clavate, tapering to a very thin pedicel, plentiful.

Agaricus (Inocybe) Whitei, Berk. & Br., Ann. Nat. Hist., n. 1527; Cke., Illustr., pl. 404A.

On the ground in pine woods, &c.

Stature that of *I. geophylla*, a very curious and beautiful little species allied to *I. vatricosa*. (Berk. & Br.) Readily known by the viscid, tawny pileus.

Inocybe tricholoma. A. & S.

Pileus ⅔–1½ in. across, plane, becoming more or less depressed, sometimes irregular, rather viscid, whitish, margin irregularly fringed with adpressed white fibrils; gills decurrent, thin, pale brownish-tan; stem 1½–2 in. long, 1½–2 lines thick, white, squamulose upwards.

Agaricus (Inocybe) tricholoma, Alb. & Schw., Consp., p. 188; Cke., Illustr., pl. 404B.

In woods.

Distinguished from all other species by the white stem and viscid white pileus with a more or less fringed margin.

BOLBITIUS. Fries. (figs. 18, 19, p. 3.)

Pileus membranaceous; gills adnexed or free, membranaceous, soft, salmon-colour or rusty, dissolving (not dripping as in *Coprinus*), powdered with the rusty spores; stem central; universal veil absent, partial veil often obsolete.

Bolbitius, Fries, Epicr., p. 253; Cke., Hdbk., p. 234.

Very delicate and fragile, remarkable amongst the ochrosporae for the gills dissolving into mucus, and in this respect analogous with *Coprinus* amongst the Phaeosporae, and *Hiatula* amongst the Leucosporae. Growing on dung or amongst grass where dung abounds.

A small but very natural genus, with the vegetative portion like *Coprinus* and the fructification resembling *Cortinarius*, hence occupying an intermediate position between these two genera. (Fries.)

Bolbitius grandiusculus. Cke. & Mass.

Pileus 1½–2 in. across, almost membranaceous, campanulate then expanded, smooth, slightly striate at the margin, pale yellow, disc rufous; gills narrowed behind and quite free, about ·1 line broad, crowded, pale then rusty-ochraceous; stem 3–4 in. long, 3 lines thick at the base, slightly and uniformly attenuated upwards, white, smooth, even, straight, hollow; spores rusty, elliptic-oblong, 15 × 5–6 μ.

Bolbitius grandiusculus, Cke. & Massee, Grev., vol. xviii. p. 53; Cke., Hdbk., p. 378; Cke., Illustr., Suppl., pl. 1159.

Amongst grass.

The largest species of the genus, known at once by the narrow, free gills, and the long, pure white, tapering stem.

Bolbitius vitellinus. Fr.

Pileus 1½–2 in. across, flesh equal, thin, campanulate or ovate then expanded, viscid, clear deep yellow, at first even, then the margin becomes sulcate and often splits; gills slightly adnexed, narrow, ochraceous-tan; stem about 3 in.

long, 2 lines thick, equal, straight or rather wavy, white, and covered with white squamules, hollow; spores elliptical, tawny-ochraceous, 10 × 6 μ.

Bolbitius vitellinus, Fries, Epicr., p. 254; Cke., Hdbk., p. 235; Cke., Illustr. pl. 928A.

On dung and in rich pastures. Subcaespitose. Closely allied to *B. Boltoni* and *B. flavidus*; distinguished from the former by the clear egg-yellow colour of the pileus, which is not darker nor depressed at the disc; known from the latter by the white stem.

Bolbitius flavidus. Bolton.

Pileus 1–2 in. across, glutinous, conical then expanded, but usually with the disc a little elevated, margin striate and usually split, pale yellow; gills almost or quite free, about 2 lines broad, at first white, then yellow, at length dusky brown, stem about 2 in. high, 2–3 lines thick at the base, slightly thinner upwards, yellow both outside and inside, hollow, veil very fugacious at an early stage, and leaving no mark on the stem; spores elliptical, brown, 10 × 6 μ.

Agaricus flavidus, Bolton, p. 149, pl. 149; Cke., Illustr., pl. 689.

On dunghills, &c. As stated under *Bolbitius Boltoni*, Fries; the true species called *Agaricus flavidus* by Bolton is quite distinct from the species of Fries, the principal points of distinction being that in the present species the pileus is obtuse or subgibbous and not darker at the disc than elsewhere, the free gills, and the plant not becoming dry and papery at maturity, but deliquescing. The following is Bolton's own account.

The root is small and hard, emitting black-brown fibres.

The stem is 2 in. high, smooth, largest at the base, hollow, yellow both within and without, and easily splits in yellow shining filaments.

The curtain is white, extremely light and delicate; it vanishes in the infancy of the plant, and leaves no mark on the stem.

The gills are in three series, of a narrow, oblong figure, thin, and tender; they are at first white, afterwards yellow, and change at last to a dusky brown.

The pileus at first conical, and covered with a tough,

slippery gluten; afterwards becomes convex, but most frequently with the centre a little elevated; in the progress of growth, the margin becomes striated, and frequently rent; at last the whole plant dissolves in a brown jelly.

Grows on dunghills, after rain, June and July. (Bolton.)

Bolbitius Boltoni. Fr.

Pileus, rather fleshy, viscid, at first even, then with the membranaceous margin sulcate, disc darker subdepressed; stem attenuated, yellowish, at first floccose from the remains of the fugacious veil; gills subadnate, yellow then livid-brown.

Bolbitius Boltoni, Fries, Epicr., p. 254; Fries, Hym. Eur., p. 334; Cke., Hdbk., p. 234; Cke., Illustr., pl. 689 (not Bolton, pl. 149).

Amongst heaps of leaves in places where dung abounds. Pileus at first conical, yellow, becoming pale, at length dry and papery. Spores fuscous-brown. (Fries.)

Fries has seen the fungus described above in a living condition, and at the same time considered it to be identical with the fungus called *Agaricus flavidus* by Bolton, p. 149, and figured on pl. 149; but when the descriptions by Bolton and Fries are compared, it will be seen that there are some discrepancies, the main feature in Fries' plant, as indicated by italics, is "*disco obscuriore subdepresso*," whereas Bolton says most frequently with the centre (of the pileus) a little elevated, and during recent years Mr. Phillips of Shrewsbury has found a fungus on dung that accords exactly with Bolton's description and figure, having the pileus slightly gibbous, and not subdepressed and darker as stated by Fries, the spores in Mr. Phillips's specimens are clear brown, not "*brunneo fuscae*," as in Fries' fungus, and the gills are free. The specimens found by Mr. Phillips are figured in Cooke's Illustrations, pl. 689.

The plant of Fries, judging from his quotation of Bolton's figure, must be about the same size as the latter, but being distinct from Bolton's fungus, with which it has hitherto been confounded, it is doubtful whether the *Bolbitius Boltoni*, Fries, is a native of Britain.

Bolbitius fragilis. Fr.

Pileus about 1 in. across, almost membranaceous, viscid,

pellucid, margin striate, rather umbonate, yellow becoming pale; gills attenuated behind, adnexed, about 1½ line broad, rather distant, yellowish then pale cinnamon; stem 2–3 in. long, 1½ line thick, attenuated upwards, straight, naked, yellow, hollow; spores ferruginous, elliptical, 7 × 3–5 μ.

Bolbitius fragilis, Fries, Epicr., p. 254; Cke., Hdbk., p. 235; Cke., Illustr., pl. 720A.

On dung and amongst grass. Solitary, or 2–3 clustered togethered.

More slender than *Bolbitius Boltoni*, fragile, drying up, yellow becoming pale. Spores ferruginous. (Fries.)

Bolbitius apicalis. W. G. Sm. (figs. 18, 19, p. 3.)

Pileus conical, not expanding, ¾–1 in. long, membranaceous, brownish, striate from the first up to the ochraceous, even, subumbonate disc, the difference in colour between the two parts defined by a distinct line; gills free, at first pressed to the stem, 1½ line broad, ventricose, bright brown; stem about 1½ in. long, incrassated at the base, striate, white, minutely mealy under a lens, hollow; spores brown, elliptical, 9 × 6–7 μ.

Bolbitius apicalis, W. G. Smith, in Cooke's Hdbk., ed. i., p. 171; Cke., Hdbk., p. 235; Cke., Illustr., pl. 720B.

In pastures.

Distinguished by the pileus being striate and brown up to the smooth, ochraceous disc.

Bolbitius titubans. Fr.

Pileus ¾–1 in. across, membranaceous, ovato-campanulate then expanded, discoid, yellow; gills slightly adnexed, about 1 line broad, rather distant, pallid then salmon-colour; stem 1½–2½ in. long, about 1 line thick, straight, yellowish, shining, hollow; spores 12 × 8 μ.

Bolbitius titubans, Fries, Epicr., p. 254; Cke., Hdbk., p. 235; Cke., Illustr., pl. 690.

Amongst grass, &c. Very fragile, almost tottering. Fries states that the gills are pallid then becoming purplish or brownish flesh-colour, and in that respect his specimens differed from the figures of other fungologists. He also says that the spores appear purplish-brown.

Pileus conical, at length plane, ½–¾ of an inch broad, mem-

branaceous, plicate, pale yellow, deepest in the centre, and smooth. Lamellae distant, pale, at length brown-red or flesh-colour, narrow, mottled. Stipes scarcely more than a line thick, 3–4 in. long, hollow, weak, yellow. A very elegant species, possessing, according to Withering, a strong and disagreeable smell. (Grev.)

Bolbitius rivulosus. B. & Br.

Pileus about 1½ in. across, campanulate, striate, rivulose, dingy tan-colour; flesh white, rather thick at the disc, elsewhere membranaceous; gills narrowed behind, slightly adnexed, rather distant, about 1½ line broad, cinnamon; stem about 3 in. long, 3 lines thick at the base, gradually attenuated upwards, straight, smooth, even, white, hollow; spores elliptic-oblong, ferruginous, 10–12 × 6–7 μ.

Bolbitius rivulosus, Berk. & Broome, Ann. Nat. Hist., n. 1773; Cke., Hdbk., p. 236; Cke., Illustr., pl. 928B.

In an orchid house.

Distinguished by the dirty tan-coloured pileus striate half-way up. Possibly an introduced species.

Bolbitius niveus. Mass.

Pileus about 1 in. across, rather fleshy, campanulate, obtusely umbonate, smooth, slightly viscid, margin striate, pure white; gills narrowed behind and quite free, about 1 line broad, rather distant, broadest in front, pallid then salmon-colour; stem about 4 in. long, clavato-bulbous at the base, gradually attenuated to the apex, rather tough, shining, pure white, hollow; spores elliptical, salmon-colour, 18 × 9–10 μ.

Bolbitius conocephalus, Bull., Cke., Hdbk., p. 378; Cke., Illustr., pl. 1160.

On the ground in the palm-house, Kew. Readily known by the pure white pileus and stem. Certainly not the species intended by Bulliard. In all probability an exotic species, introduced with soil.

Bolbitius tener. Berk.

Pileus exceedingly delicate, elongato-conical, ⅓–1 in. long, not expanding, even, smooth, moist, yellowish-white; gills attenuated behind and nearly free, narrow, not crowded, salmon-colour; stem variable in length, 1½–3 in. high, about

1 line thick, clavato-bulbous at the base, white, hollow; spores elliptical, salmon-colour, 15–16 × 8–10 μ.

Bolbitius tener, Berk., Outl., p. 183; t. 12, f. 2; Cke., Hdbk., p. 235; Cke., Illustr., pl. 691.

Amongst grass.

Very slender. Distinguished by the smooth, even, whitish conical pileus and the bulbous base of the stem.

PLUTEOLUS. Fr. (fig. 7, p. 3.)

Pileus conical or campanulate then expanded, flesh thin; viscid, margin at first straight and adpressed to the stem; gills rounded behind and free from the stem; stem central, its substance differentiated from the flesh of the pileus; spores ferruginous or saffron-colour.

Pluteolus, Fries, Hym. Eur., p. 266; Cke., Hdbk., p. 182.

Growing on wood. The present genus corresponds morphologically to *Pluteus* in the *Rhodosporae*.

Pluteolus reticulatus. Fr. (fig. 7, p. 3.)

Pileus 1–1½ in. across, flesh thin, campanulate, becoming plane, viscid, with raised, anastomosing veins forming a vague network, margin striate, greyish or pale lilac; gills free, ventricose, crowded, 1½ line broad, rusty-saffron colour; stem 1½–2 in. long, 1½ line thick, slightly incrassated at the base, fragile, fibrillose, white, hollow; spores ferruginous in the mass, elliptical, smooth, 7 × 4 μ.

Agaricus (*Pluteolus*) *reticulatus*, Fries, Hym. Eur., p, 266; Cke., Hdbk., p. 183; Cke., Illustr., pl. 495.

On dead wood.

Closely resembling *Pluteus* in habit and structure, but with ferruginous spores.

Pluteolus aleuriatus. Fr.

Pileus about ⅜ in. across, thin, conico-convex then flattened, viscid, striate, not wrinkled, greyish or pink; gills free, ventricose, ochraceous-saffron; stem 1½–2 in. long, about 1 line thick, white, pulverulent, often incurved, hollow.

Agaricus (*Pluteolus*) *aleuriatus*, Fries, Hym. Eur., p. 266; Cke., Hdbk., p. 183.

On rotten sticks, &c.

Fragile. Distinguished from *P. reticulatus*, by the pileus not having raised, anastomosing veins, and in the powdery stem.

PHOLIOTA. Fries. (fig. 10, p. 3.)

Pileus more or less fleshy; gills adnate, with or without a decurrent tooth, or rounded behind and adnexed, tawny or ferruginous at maturity, as are also the spores; stem central, furnished with a distinct interwoven ring.

Pholiota, Fries, Syst. Myc., i. p. 240; Cke., Hdbk., p. 140.

The only genus in the Ochrosporae having the stem furnished with a persistent, membranous, or interwoven more or less spreading ring. In *Flammula*, a closely allied genus, the ring, if present, is fibrillose and never forms more than an indistinct silky zone or girdle round the stem. In *Cortinarius*, which is also allied, the veil is fibrillose, forming at most a zone round the stem.

A few species grow on the ground, principally in damp places amongst moss, but the majority grow on wood, and are often densely caespitose. The genus includes many very large and brilliantly coloured species.

ANALYSIS OF THE SPECIES.

A. HUMIGENI.—Terrestrial; rarely caespitose.

* *Eudermini.*—Spores ferruginous.

** *Phaeoti.*—Spores dusky ferruginous.

B. TRUNCIGENI.—Growing on wood; subcaespitose.

* *Aegeritini.*—Pileus naked, not scaly, but sometimes cracked; gills pallid, becoming rufescent or dusky.

** *Squarrosi.*—Pileus scaly, not hygrophanous; gills becoming discoloured.

† *Gills not purely ferruginous.*

†† *Gills yellow, then pure ferruginous or tawny.*

*** *Hygrophani.*—Gills cinnamon (not at first yellow).

C. Muscigeni. — Hygrophanous. Analogous to *Galera*, with a ring.

A. HUMIGENI.

* *Edermini.*

Pholiota aurea. Matt.

Pileus 4–6 in. across, hemispherical then expanded, fleshy but not compact, soft, obtuse, rather velvety at first, then torn into minute squamules, bright tawny-yellow or more or less ochraceous, gills adnexed then almost free, 3–4 lines broad, ventricose, connected by veins, pale tawny-ferruginous; stem 5–8 in. long, ½–¾ in. thick, almost equal, even, more or less covered with ferruginous, scurfy, separating particles below the ring, solid, pale; ring variable, small or ample, erect then spreading; spores elliptical, tawny-ferruginous, 10 × 5 μ.

Agaricus (Pholiota) aureus, Mattusch., Sil., p. 351; Cke., Hdbk., p. 140; Cke., Illustr., pl. 346.

Agaricus (Pholiota) aureus, Matt., var. *Herefordiensis*, Cke., Illustr., pl. 347.

On the ground. Subcaespitose.

Very handsome; the flesh thin in proportion to the size of the pileus, soft, white, becoming yellowish. The spores are shed copiously, powdering the distant ring and apex of the stem. Ring sometimes ample, radiato-striate, veined. (Fries.)

Var. **Vahlii**, Schum., Fl. Danica, t. 1496; pileus even, glabrous; gills almost free.

Differs more especially from the typical form in the smooth pileus.

Pholiota caperata. Pers.

Pileus 3–5 in. across, flesh thin, ovate then expanded, obtuse, moist, viscid only when moist, covered with superficial white particles, more or less bright yellow; gills

adnate, seceding, thin, 2–3 lines broad, margin serrulate, pallid then tan-colour; stem 4–6 in. long, up to 1 in. thick, cylindrical or swollen at the base, white, apex shining white, squamulose from the superior, membranaceous, deflexed ring, solid; spores elliptical, 12 × 4·5 μ.

Agaricus caperatus, Persoon, Syn., p. 273; Cke., Hdbk., p. 140; Cke., Illustr., pl. 348.

In woods. Solitary, or two or three together.

Large, stout, but pileus thin in proportion. The young pileus is covered with white flocci, crowded at the even disc and squamulose towards the thin lacunose sulcate margin, becoming naked. A persistent volva is sometimes present at the base of the stem during rainy weather. There is a smaller form in pine woods, with a short stem, 1½–3 in. long, and with the pileus even. (Fries.)

Pholiota terrigena. Fr.

Pileus 1½–3 in. across, fleshy, rather compact, lenticular then flattened, obtuse, adpressedly silky-fibrillose, pale dingy yellow; flesh yellow; gills adnate with a decurrent tooth, about 2 lines broad, scarcely crowded, yellowish then ferruginous with an olive tinge; stem about 2 in. long and 3–5 lines thick, flesh fibrous, not thickened at the base, dingy yellow, variegated with squarrose, small ferruginous wart-like squamules; partial veil remains in part on the stem, forming a ring, and in part appendiculate at the margin of the pileus, stuffed; spores broadly elliptical, 5 × 3 μ.

Agaricus (Pholiota) terrigenus, Fries, in Vet. Ak. Förh., 1851; Cke., Hdbk., p. 141; Cke., Illustr., t. 349.

Damp ground in woods, &c.

A small form occurs with the veil obliterated, may readily be confounded with *Cortinarius venetus* and *Cortinarius depexus*. (Fries.)

Pholiota erebia. Fr.

Pileus 1–2 in. across, convex then flattened, glabrous, rather viscid, hygrophanous, often wrinkled, margin striate, umber with an olivaceous tinge, ochraceous-tan when dry; flesh thin, dingy; gills adnate, rather distant, 2 lines broad, pallid then dingy cinnamon; stem 2 in. long, 3–4 lines thick, equal, somewhat striate, soon pale, hollow; ring

superior, soon drooping with the margin upturned, often striate.

Agaricus (Pholiota) erebius, Fries, Syst. Myc., i. p. 246; Cke., Hdbk., p. 141; Cke., Illustr., pl. 328.

Agaricus jecorinus, B. & Br., Ann. Nat. Hist., n. 328.

Grassy places in woods, &c.

Gregarious, rather fragile, pileus often rugulose, lurid, when dry ochraceous-tan. (Fries.)

The pileus is sometimes more or less umbonate, also sometimes depressed.

Pholiota ombrophila. Fr.

Pileus 2–3 in. across, convex then flattened, gibbous, even, smooth, hygrophanous, wholly pale dingy ferruginous when moist, tan colour when dry; flesh thin, white; gills adnate, soon seceding, ventricose, crowded, narrowest in front, tan-colour then ferruginous; stem 3–4 in. long, 3–4 lines thick, equal, rather fragile, faintly fibrillose or striate, pallid, hollow; ring distant, entire, white; spores elliptical, rusty, $8 \times 3 \cdot 5\ \mu$.

Agaricus (Pholiota) ombrophila, Fries, Hym. Eur., p. 216; Cke., Hdbk., p. 141; Cke., Illustr., pl. 359.

Agaricus togularis, Fries, Syst. Myc., i. p. 241; Fries, Elench., p. 33.

In grassy places, after heavy rains.

Much larger than *Pholiota togularis;* when moist wholly dilute ferruginous, pileus 3 in. broad, tan-colour when dry. Flesh white. Stem firm, 3–5 lines thick. (Fries.)

White wart-like fragments of the veil are often present on the pileus near the margin.

Var. **brunneola,** Fries, Icon., pl. 103.

Pileus 1½ in. across, obtuse, brown; gills narrower than the typical form (1½ line); stem 1½ in. long.

On the ground.

Pholiota togularis. Bull.

Pileus ⅔–1½ in. across, flesh thin, becoming yellow, campanulate then expanded, obtuse, orbicular, glabrous, not striate, pale ochraceous; gills adnate, seceding, 1½ lines broad, ventricose, crowded, yellowish then pale ferruginous; stem 3–4 in. long, 2 lines thick, equal, rigid, often flexuous,

dilute ochraceous, paler upwards, hollow; ring distant from the apex, entire, spreading; spores elliptical, 8 × 3·5 μ.

Agaricus togularis, Bulliard, Champ. Fr., t. 595, f. 2; Fries, Hym. Eur., p. 216; Fries, Icon., t. 104; Cke., Hdbk., p. 141; Cke., Illustr., pl. 350.

Agaricus mesodactylus, B. & Br., Ann. Nat. Hist., n. 681, t. 9, f. 1.

Amongst grass, in gardens, &c.

Very variable. Slender, size very variable. Gregarious.

Pholiota blattaria. Fr.

Pileus ½–⅝ in. across, flesh thin, campanulate, soon flattened, rather umbonate, glabrous, ferruginous, hygrophanous, margin striate; gills rounded behind and free, ventricose, crowded, 1 line broad, watery cinnamon; stem 1–1½ in. long, 1 line thick, equal, straight, white, hollow; ring distant, silky, entire, white; spores elliptical, 4 × 2 μ.

Agaricus (Pholiota) blattaria, Fries, Syst. Myc., i. p. 246; Cke., Hdbk., p. 373; Cke., Illustr., pl. 1172B.

In gardens, &c.

Elegant, small, very distinct, but requires to be carefully distinguished from small forms of *Pholiota togularis*.

Grassy places by paths. Small, but pretty, stem fistulose, 1½ in. long, scarcely 1 line thick, equal, straight, rather fragile, below the distant, medium, entire, reflexed ring, silky and white. Pileus rather fleshy, thin, convex when young then plane, obtuse or obtusely umbonate, yellowish-tan, disc darker, almost ferruginous, ½–1 in. broad, not more, margin striate, even when dry and becoming pale. Flesh similarly coloured, very thin. Gills rounded behind, free, ventricose, 1 line broad, crowded, quaternate, watery cinnamon. Spores ferruginous. Resembles a *Galera* with a ring. (Fries.)

** *Phaeoti.*

Pholiota dura. Bolton.

Pileus 2 in. across, fleshy, rather compact, convexo-plane, smooth, at length cracked, margin even, tawny-tan, becoming fuscous; gills adnate, striato-decurrent with a tooth, 3–5 lines broad, livid then rusty-brown; stem 1½–2 in. long, 4–6 lines thick; thickest at the apex where it is mealy, some-

times ventricose or irregular, stuffed, whitish; ring apical, torn; spores elliptical, almost ferruginous, 8–9 × 5–6 μ.

Agaricus durus, Bolton, Fung. Halifax, t. 67, f. 1; Cke., Hdbk., p. 142; Cke., Illustr., pl. 423.

On the ground in gardens, &c.

The root consists of a number of fibres issuing from the hard compressed bottom of the stem. The stem is round, solid, 2 in. high, and of a pale whitish-buff colour. The curtain is very delicate and tender; it is white, and breaks and vanishes in the infancy of the plant. The gills are extremely numerous, deep, semi-oval, and regularly arranged in three series; they are thin and of a pale greyish colour. The pileus is convex, even, and smooth at the rim; the surface smooth, of a pale dusky yellow, and feels like vellum; the substance of the whole plant very hard and brittle. (Bolton.)

Pholiota praecox. Pers.

Pileus 1½–3 in. across, fleshy, soft, convex, soon plane, obtuse, almost glabrous, even, whitish then tan-colour, moist but not viscid in rainy weather, becoming pale; gills emarginate, adnexed, crowded, 3 lines broad, white then brownish; stem 2–4 in. long, 3–4 lines thick, cylindrical, mealy and pubescent then glabrous, fragile, whitish, filled with pith then hollow; ring white, reflexed, entire; spores brownish, 8–13 × 6–7 μ.

Agaricus praecox, Persoon, Syn., p. 420; Cke., Hdbk., p. 142; Cke., Illustr., pl. 360; Fries, Hym. Eur., p. 217.

Amongst grass, &c., in gardens. In spring.

Spores fuscous-brown; pileus yellowish-white; gills with a subdecurrent tooth. Var. *minor*, pileus scarcely 1 in. across, ring torn, appendiculate. (Fries.)

Pholiota sphaleromorpha. Bull.

Pileus 1½–2 in. across, flesh thin, convex then plane, even, yellow; gills arcuato-decurrent, dry, yellowish-white then becoming brownish; stem 3–4 in. long, 2–4 lines thick, incrassated at the base, silky, yellowish, stuffed then becoming partly hollow; ring ample, distant, entire, membranaceous.

Agaricus sphaleromorphus, Bull., Champ., t. 450, f. 1; Fries, Hym. Eur., p. 217.

Amongst leaf soil, &c.

Stem stuffed or partly hollow, 3–4 in. long, 2–3 lines thick, attenuated upwards, silky, yellowish, base incrassated, villose; ring median, ample, spreading, lax, even, consisting of a very thin membrane. Pileus fleshy, thin, convexo-plane, obtuse, even, smooth, yellow, 2 in. broad, smaller in proportion to the stem than in *Pholiota praecox* or *P. durus*. Gills not sinuate behind, but equally broad and truly decurrent, linear, 1½ line broad, yellowish then ferruginous-tan, or at length becoming brownish. (Fries.)

Pholiota molliscoria. Cke. & Mass.

Pileus 2–3 in. across, convex then plane, at length depressed, obtuse, even, smooth, soft like kid leather, tawny-yellow, paler towards the margin, dry, shining; flesh very thin, yellow like that of the stem; gills adnexed, rounded behind, ventricose, 2 lines broad, crowded, thin, ferruginous; stem about 3 in. long, ¼–⅓ in. thick, equal, straight, silky, punctately squamulose at the apex, pale yellow, hollow; ring distant, broad, yellow then ferruginous from the spores, deciduous; spores elliptic-fusiform, ferruginous, 12 × 5–6 μ.

Agaricus (Pholiota) molliscorium, Cooke & Massee, Grev., vol. xvii. p. 1; Cke., Hdbk., p. 173; Cke., Illustr., pl. 1171.

On the ground. Gregarious.

Taste and smell none. Habit that of *Pholita praecox*, with which it was associated, but differing in the yellow colour, and the bright ferruginous gills. (Cke. & Mass.)

B. TRUNCIGENI.

* *Aegeritini.*

Pholiota radicosa. Bull.

Pileus 2–4 in. across, fleshy, symmetrical, obtuse, even, glabrous, spotted, pale greyish-tan; gills free, ventricose, 3–4 lines broad, pallid then reddish-brown; stem 4–6 in. long, ¾ in. or more at thickest part, more or less ventricose below the middle, and passing into a tapering root, concentrically squamulose up to the distant ring, mealy and smooth above, coloured like the pileus or paler, solid; spores pip-shaped, pale, 9 × 4½ μ.

Agaricus radicosus, Bulliard, Champ., t. 160; Cke., Hdbk., p. 142; Cke., Illustr., pl. 361.

Near to stumps, in woods. Known by the attenuated, rooting stem, free gills, and strong scent.

Smell strong, rather sweet, grateful, taste peculiar. Solitary or gregarious, not caespitose. Stem solid, firm, but spongy within, 3–4 in. long, ½ in. thick, white, incrassated at the base and fusiformly rooting; below the distant, entire, rather erect ring, concentrically squamose, squamules erect, floccose; apex mealy. Pileus fleshy, convex then plane, regular, naked and even, almost dry, 3–5 in. broad, almost clay-colour, then from the spores of superposed specimens, spotted with rufous. Flesh fairly thick, white. Gills rounded behind, almost free, very much crowded, 3 lines broad, pallid, then, like the spores, rufo-ferruginous. (Fries.)

Pholiota pudica. Fr.

Pileus 1–3 in. across, fleshy, convex then expanded or even sometimes depressed, obtuse, even, dry, glabrous, white or slightly tinged with tawny; gills rounded behind, adnexed, ventricose, 2 lines broad, whitish then tawny; stem 1–2 in. long, 2–5 lines thick, straight or most frequently incurved and ascending, equal, even, white, solid; ring superior, spreading, white, persistent; spores elliptical, $6–7 \times 3 \cdot 5\ \mu$.

Agaricus (*Pholiota*) *pudicus*, Fries, Hym. Eur., p. 218; Cke., Hdbk., p. 142; Cke., Illustr., pl. 362.

Agaricus albus, Bulliard, Champ., t. 597, f. 2, R.S.

On trunks of elder and other trees.

Simple or caespitose; stem sometimes excentric and curved at the base. According to Bulliard's figure quoted above, the pileus is pruinose at the disc.

Pholiota leochroma. Cooke.

Pileus 1½–2½ in. across, fleshy, convex then plane, at length depressed, soft, smooth, not shining, tawny; gills adnate, rounded behind, slightly ventricose, 2–3 lines broad, pallid then cinnamon-colour; stem 3–4 in. long, 3 lines thick, nearly equal, even, solid, whitish, ring persistent, superior, tawny; spores profuse.

Agaricus (*Pholiota*) *leochromus*, Cke., Journ. Bot. (1863), t. 3, f. 3; Cke., Hdbk., p. 143; Cke., Illustr., pl. 363.

On stumps, &c. Caespitose.

In Cooke's figure the pileus is yellowish-white at the margin, passing into tawny at the disc, the surface, especially at the disc becoming cracked in an areolate manner.

Pholiota capistrata. Cooke.

Pileus 1½–2 in. across, flesh rather thick, white, convex, margin involute, slightly striate, pale dingy yellow, rather viscid; gills slightly decurrent, 2 lines broad, pallid, growing darker, stem 3–4 in. long, nearly equal, rather squamulose, whitish, stuffed, almost straight or ascending; ring superior, white, spreading, persistent.

Agaricus (*Pholiota*) *capistratus*, Cke., Journ. Bot. (1863), t. 3, f. 4; Cke., Hdbk., p. 143; Cke., Illustr., pl. 364.

On old elm stumps, &c.

Known by the dingy yellowish-white, slightly viscid pileus with the margin faintly striate.

Pholiota aegerita. Fr.

Pileus 2–4 in. across, very fleshy, convex then plane, rivulose and wrinkled, tawny, towards the margin becoming pallid or whitish, flesh white, gills adnate with a decurrent tooth, 3 lines broad, crowded, pallid then fuscous; stem 4–6 in. long, ½–⅔ in. thick, equal, fibrillose, white, silky, stuffed; ring superior, white, tumid; spores elliptical, 10 × 5 μ.

Agaricus (*Pholiota*) *aegerita*, Fries, Epicr., p. 164; Fries, Hym. Eur., p. 219; Cke., Hdbk., p. 143; Cke., Illustr., pl. 453.

On trunks of poplar, ash, &c.

A very fine, large species, growing in a caespitose manner. The cuticle of the pileus is sometimes cracked in an areolate manner. Cooke's figure has the pileus uniform bistre-colour with the extreme margin incurved.

Pholiota luxurians. Fr.

Pileus 1–2 in. across, slightly fleshy, convex and gibbous, then expanded, unequal, silky, breaking up into squamules, yellowish-white, then rufous-brown; gills adnexed then decurrent, crowded, greyish flesh-colour, then brownish; stem 1½–2 in. long, white then brownish, rather squamulose, rigid, stuffed, ring superior; spores elliptical, 10 × 4 μ.

Agaricus (*Pholiota*) *luxurians*, Fries, Epicr., p. 164; Cke.,

Hdbk., p. 143; Cke., Illustr., pl. 365 (called *Ag.* (*Pholiota*) *aegerita*).

On oak trunks, &c.

Caespitose, very irregular, flesh white. Pileus at first yellowish-white, more even, then rufo-fuscous. (Fries.)

** *Squarrosi.*

† *Gills not pure ferruginous.*

Pholiota comosa. Fr.

Pileus 3-6 in. across, very fleshy, convex then slightly expanded, obtuse, viscid, with scattered floccose, superficial, adpressed, seceding, white scales, dingy tawny; flesh firm, whitish; gills slightly decurrent, quite entire, 3–5 lines broad, white then brownish-tan; stem 3-4 in, long, up to ¾ in. thick, rather bulbous at the base, rather coarsely fibrillose below the floccose, appendiculate ring, smooth above, whitish, solid, usually curved and ascending; spores elliptical, brownish-ferruginous, elliptical, 12 × 6 μ.

Agaricus (*Pholiota*) *comosus*, Fries, Epicr., p. 165; Kalchbrenner, Icon. Hung., t. 13, f. 1; Cke., Hdbk., p. 144; Cke., Illustr., pl. 600.

On trunks and stumps of beech, &c.

Usually in small clusters. Odour faint. In Kalchbrenner's figure, quoted above, there is a section given having the pileus 7 in. across; gills ¾ in. broad at the base, rounded behind and slightly adnexed; stem about 1 in. thick. This figure is quoted by Fries under the present species.

Scarcely caespitose, yet several specimens are often joined at the base; very distinct from *Pholiota squarrose*, but very similar to *Hypholoma sublateritius*, especially in the brownish-ferruginous spores, a character by which it is easily known from its neighbouring allies and which places it intermediate between *Pholiota* and *Stropharia*. Inodorous; stem solid, when young very compact and hard, sub-bulbous, then elongated, nearly equal, and I have also seen it hollow, fibrillose (not scaly), white; long and slender compared with neighbouring species, ring more or less curtain-like, floccose, fairly persistent. Pileus fleshy, convex then expanded,

obtuse, 3 in. across, viscid, tawny, sprinkled with seceding, superficial, paler scales, by which character it is distinguished with certainty from all its allies. Flesh compact, white, gills adnato-decurrent, not very crowded, entire, white then brownish-tan. (Fries.)

Pholiota heteroclita. Fr.

Pileus 3–6 in. across, plano-convex then flattened, very obtuse, slightly excentric, spotted with scattered, innate, adpressed scales, whitish or becoming yellowish flesh thick, firm, pallid, margin usually ragged from the remains of the veil; gills rounded behind, adnexed, 3–5 lines broad, pallid then obscure ferruginous; stem 3–4 in. long, 1 in. and more thick at the bulbous base, rooting, hard, fibrillose, whitish, base darker and reddish-brown inside, solid, ring apical, torn, floccose.

Agaricus (Pholiota) heteroclitus, Fries, Obs., ii. p. 223; Cke., Hdbk., p. 144; Cke., Illustr., pl. 366.

On trunks, chiefly birch. Somewhat resembling *Pholiota comosa*, but distinguished at once by the strong, pungent, horse-radish odour. Solitary according to Fries, but in Cooke's figure three specimens are connate at the base of the stem, the pilleus and stem are also dingy brown.

Solitary, compact, odour strong, pungent, almost like horse-radish. Stem solid, firm, stout, but short, about 2 in., base bulbous-incrusted, and praemorsely rooting, ½–1 in. thick, fibrillose, white, commonly curved and ascending, apex veiled, base rhubarb-colour within. Veil very rarely forming a perfect ring at the apex of the stem, commonly appendiculate from the margin of the pileus, floccoso-radiate, and always forming a zone round the stem. Pileus fleshy, compact and hard when young, often excentric, hemispherical then expanded, very obtuse, 2–3 in., then 4–5 in. across, sometimes even, generally broken up into broad, scattered, innate, adpressed, spot-like (darker) scales, whitish or yellow, when old sometimes tawny, sometimes viscid. Flesh thick, firm, pallid. Gills rounded behind, slightly adnexed, very broad, plane, crowded, at first pallid, then dingy ferruginous. (Fries.)

Pholiota aurivella. Batsch.

Pileus 3–6 in. across, fleshy, campanulate then convex,

gibbous, slightly viscid, tawny-yellow, variegated with adpressed, darker scales; gills sinuate, adfixed, 2–3 lines broad, white then straw-colour, finally rusty-umber; stem 4–6 in. long, $\frac{1}{3}$–$\frac{2}{3}$ in. thick, almost equal, curved, yellowish, with scattered, adpressed, rusty-brown floccose squamules, stuffed, often hollow with age; ring rather distant, imperfect; spores elliptical, $5 \times 2{\cdot}5$ μ.

Agaricus aurivellus, Batsch, Consp., f. 115; Cke., Hdbk., p. 144; Cke., Illustr., pl. 351.

On trunks; caespitose.

Disc of the pileus compact, when young, and after expansion towards the margin, floccose, rusty-yellow. Gills at length bay. (Fries.)

The pileus is not so glutinous as in *Pholiota adiposa*, and the stem is not viscid. *P. spectabilis* differs in having the pileus perfectly dry (not viscid), and in the adnato-decurrent gills.

Forming small clusters and often solitary. Smell scarcely noticeable. Stem stuffed, partly rooting, about 3 in. long, $\frac{1}{3}$–$\frac{3}{4}$ and more thick, almost equal, not attenuated at the base, but often thickened, commonly curved, covered with adpressed, floccosely fibrillose, brownish-ferruginous tomentum, then almost naked, fibrillose, yellowish. Ring silky on the margin of the inflexed pileus, submembranaceous on the stem near to the pileus. Pileus fleshy, campanulate then convex, disc compact and gibbous after expansion, 3–5 in. broad, moist, scarcely viscid, in the young stage, and towards the margin when older, with scattered, adpressed, spot-like darker scales, yellow or ferruginous-yellow. Flesh of pileus and stem white then yellowish. Gills sinuate, adnexed, broad, crowded, at first whitish then straw-colour, at length ferruginous-bay, or almost brown, never with an olive shade. Spores ferruginous. (Fries.)

Pholiota squarrosa. Müll.

Pileus 2–4 in. across, fleshy, campanulate then expanded, often gibbous, dry, yellowish-brown, covered with darker, innate, squarrose scales; gills slightly decurrent, crowded, about 2 lines broad, pallid olive then ferruginous; stem 3–5 in. long, 3–5 in. thick, slightly attenuated towards the base, flexuous or ascending, pale tawny-brown and covered with

darker recurved scales as far up as the superior, spreading, floccose ring, smooth and pale above the ring, stuffed; spores ferruginous, 8 × 4 μ.

Agaricus squarrosus, Müll., Fries, Syst. Myc., i. p. 143; Cke., Hdbk., p. 144; Cke., Illustr., pl. 367.

On trunks of trees, on and near stumps, &c.

Caespitose; strong smelling, dull orange-ferruginous, sometimes compact, at others thin.

On decaying stumps of various trees, but particularly of the ash. Growing in tufts, frequently numerous, cap 1–4 in. across, various in form, but always more or less convex; sometimes obtusely umbonate, surface scattered with tufts of hairs collected into rigid, bristly points, somewhat erect and revolute, rarely adpressed; margin rather rounded, often ragged, from the remains of a part of the veil; colour rich brownish or reddish-yellow. Gills numerous, irregular, rather narrow, pale, with a greenish hue. Stem 3–6 in. high, thickish, similar in colour to the cap, but darker towards the base, which is generally attenuated, but sometimes equal; rugged, with brown scaly tufts, generally though not always solid. Veil ragged, brown, surrounding the stem in the form of a collar, and remaining for a considerable time. Flesh firm, thick, whitish, often with a tinge of yellow or green. (Grev.)

Var. **Mülleri.** Fr.

Pileus obtuse, pallid, adpressedly scaly, moist, gills brownish; spores elliptical, 8 × 4 μ.

Agaricus squarrosus, var. *Mülleri*, Fries, Syst. Myc., i. p. 243; Cke., Hdbk., p. 145; Cke., Illustr., pl. 471.

On trunks and stumps.

Var. **verruculosus.** Lasch.

Pileus compact, obtuse, yellow, crowded with cinnamon scales and warts; stem villosely squamose.

Agaricus squarrosus, var. *verruculosus*, Lasch, n. 353; Cke., Hdbk., p. 145; Cke., Illustr., pl. 614.

On trunks.

Var. **reflexus.** Schaeff., t. 80.

Pileus thin, cuspidately umbonate, piloso-squamose; stem rather hollow, long, equal; ring often membranaceous.

At the roots of oak-trees, &c.

Pholiota subsquarrosa. Fr.

Pileus 1½–2½ in. across, fleshy, convex, viscid, ferruginous-brown, with darker, adpressed, floccose scales: gills slightly adnexed, crowded, 2–3 lines broad, yellow, then dingy tan; stem 2–3½ in. long, 3 lines thick, equal, stuffed then hollow, yellow, ornamented with darker subsquarrose scales as high up as the superior imperfect ring, smooth above the ring.

Agaricus (Pholiota) subsquarrosus, Fries, Monogr., ii. p. 298; Fries, Hym. Eur., p. 221; Fries, Icones, ii. p. 3, pl. 103; Cke., Hdbk., p. 145.

On dead wood, also on the ground near trunks.

Subcaespitose, almost inodorous. Stem stuffed (often hollow when old), 3 in. long, equal, ferruginous-yellow, densely covered with darker scales that are adpressed or with the tips free; even above the annular zone. A distinct ring is not present. Pileus fleshy, convex, obtuse or gibbous, about 2 in. broad, viscid, brownish-ferruginous. Gills deeply sinuate behind, emarginate, almost free, crowded, pale at first, then dingy yellow; spores ferruginous. (Fries.)

With the habit and general appearance of *Pholiota squarrosa*, but known at once by the almost free gills.

†† *Gills yellow, then pure ferruginous or tawny.*

Pholiota spectabilis. Fr.

Pileus 3–5 in. across, compact, fleshy, convex then expanded, dry, cuticle torn up into silky, fibrillose scales, bright tawny-orange, becoming paler; flesh firm, sulphur-yellow; stem 3–4 in. long, 1 in. and more at the thickest part, ventricose below the middle, rather rooting, peronate, yellow tinged with tawny up to the inferior, ample, persistent, spreading ring, paler and mealy above; gills adnato-decurrent, crowded, rather narrow, yellow then ferruginous; spores elliptical, ferruginous, $9 \times 4\ \mu$.

Agaricus (Pholiota) spectabilis, Fries, Elench., p. 28; Cke., Hdbk., p. 145; Cke., Illustr., pl. 352.

On stumps. Subcaespitose.

More or less densely caespitose, very compact, in dry weather shining as if varnished, but not at all viscid. Stem solid, firm, 3 in. and more long, 1 in. thick, more or less

ventricose and ending in a fusiform rooting base, peronate from the veil; sometimes truly glabrous, shining, sometimes squamulose, sulphur-colour, even and mealy above the inferior, persistent, spreading ring. Pileus fleshy, compact, hemispherical, obtuse, dry, 2–5 in. broad, torn into adpressed, innate, similarly coloured squamules, the inflexed margin continued by the veil. Flesh thick, hard, sulphur-colour, bitter-aromatic to the taste. Gills adnate, often with a decurrent tooth, closely crowded, narrow, at first pure yellow, then ferruginous. Distinct and remote from every species, analogous with *Pholiota aurea*, but perhaps most nearly allied to *Pholiota radicosa*. (Fries.)

Pholiota adiposa. Fr.

Pileus 2–4 in. across, fleshy, compact, convex, obtuse, glutinous, yellow, with centrically arranged, superficial, seceding, darker squarrose scales; flesh whitish; gills adnate, 3–4 lines broad, yellow then ferruginous; stem 3–6 in. long, up to ⅝ in. thick, subequal, base somewhat bulbous, yellow, furnished with concentrically-arranged ferruginous, evanescent squamules up to the superior floccose, radiating ring, stuffed; spores elliptical, ferruginous, $7 \times 3\ \mu$.

Agaricus (Pholiota) adiposus, Fries, Syst. Myc., i. p. 242 (not of Batsch); Cke., Hdbk., p. 145; Cke., Illustr., pl. 535.

On trunks. Caespitose.

Distinguished by the glutinous pileus and stem, both of which are at first covered with ferruginous squamules that appear to deliquesce in the gluten.

Usually caespitose and forming large clusters. When well-developed, very showy, often very large. Stem solid, 3–6 in. long, ½–1 in. thick, thickened downwards, compact, whitish when young, then yellow, viscid, covered with squarrose, reflexed squamules, that become ferruginous from the falling spores, at length disappearing, ring for the most part curtain-like, flocoso-radiating, yellow, at length ferruginous. Pileus fleshy, convex then expanded, rather gibbous, 3–7 in. broad, very viscid, dripping gluten in rainy weather, yellow, at first covered with superficial, floccose subconcentric, at first adpressed, then squarrose, reflexed ferruginous squamules, shining in dry weather from the dried-up gluten. Flesh whitish, compact at the disc. Gills

adnate, slightly rounded, broad, very entire, pale yellow then ferruginous. (Fries.)

Pholiota lucifer. Lasch.

Pileus 1–2½ in. across, fleshy, convex then almost plane, becoming umbonate, viscid, covered at first with darker, adpressed scales which soon disappear, yellow; gills adfixed, narrow, crenulate, almost golden yellow, then ferruginous: stem 1–2 in. long, equal, rather squamulose, yellowish, base ferruginous, stuffed; ring distant.

Agaricus lucifer, Lasch, n. 356; Fries, Hym. Eur., p. 222; Krombh., t. 3, f. 2.

On trunks, branches, straw, &c.

Small (2 in. across), much more slender than *Pholiota adiposa*, from which the present is quite distinct.

Pileus yellow, becoming, along with the stem, at length smooth; stem ferruginous without and within, fibrillose. I once found in a pine wood an allied form; subterrestrial, stem hollow, gills emarginate. (Fries.)

Pholiota flammans. Fr.

Pileus 1–2 in. across, fleshy, convexo-plane, slightly umbonate, dry, tawny-yellow, with scattered, minute, pale yellow squamules; gills rather rounded or sinuate, adnexed, crowded, margin entire, yellow then tawny; stem about 2–2½ in. long, 3 lines thick, equal, rather flexuous, with squarrose squamules up to the superior ring, yellow, stuffed then hollow; spores elliptical, ferruginous, $8 \times 4\ \mu$.

Agaricus (*Pholiota*) *flammans*, Fries, Syst. Myc., i. p. 244; Cke., Hdbk., p. 146; Cke., Illustr., pl. 368 (the pale squamules on the pileus omitted).

On pine trunks and amongst pine leaves.

Subcaespitose. Very elegant. Known by the pale yellow squamules on the tawny yellow pileus, and the scaly stem.

Stem stuffed then hollow, 3 in. long, 2–3 lines thick, equal, often flexuous, furnished with deep yellow, crowded, squarrose squamules. Ring membranaceous, entire, near to the pileus, yellow. Pileus fleshy, convex then plane, subumbonate, 2–4 in. broad, absolutely dry, tawny-yellow, with scattered, superficial, squarrose, sulphur-coloured squamules; margin at first inflexed, then repand. Flesh thin, yellow,

not hygrophanous. Gills adnate, without a decurrent tooth, rather thin, crowded, at first bright sulphur-colour, then ferruginous, edge very entire. The sulphur-coloured scales on the tawny pileus distinguish this species from every other. (Fries.)

Pholiota Junonia. Fr.

Pileus 2–3½ in. across, fleshy, convex then plane, often gibbous, dry, even, glabrous, rich yellow or tawny-yellow; gills adnate, slightly rounded behind, crowded, yellow then tawny; stem 2–4 in. long, 3–4 lines thick, equal, even, incurved, yellowish upwards, tawny below, above the rather large, entire ring, furfuraceous, solid; spores ferruginous.

Agaricus (Pholiota) Junonius, Fries, Syst. Myc., i. p. 244; Cke., Hdbk., p. 146; Cke., Illustr., pl. 369.

On trunks.

The solitary or subsolitary habit, and smooth stem and pileus mark the present species.

Stem solid 1½–2 in. long, 3–4 in. thick, equal, firm, incurved, often excentric, even (not squamose), yellow; ring reflexed, approaching the pileus, above which the stem is farinaceous. Pileus fleshy, firm, convexo-plane, obtuse, 2 in. broad, dry, even, glabrous, yellow; flesh compact, pallid; gills adnate, crowded, broad in proportion, plane, yellow, at length ferruginous. Requires to be carefully distinguished from forms of *Flammula hybrida* with a ring. (Fries.)

Pholiota tuberculosa. Schaeff.

Pileus 1–2 in. across, flesh thick, compact, yellow, convex then flattened, dry, glabrous, at length splitting up into innate squamules, tawny-yellow, margin paler; gills sinuate, adnexed, 2 lines broad, plane, pale yellow then tawny or spotted with ferruginous, margin serrulate; stem 1–1½ in. long, 2–3 lines thick, incurved, more or less bulbous, rooting, fibrillose, hollow, the partly membranaceous ring deciduous, yellowish, base sometimes ferruginous; spores elliptical, pale ferruginous, 7 × 4 μ.

Agaricus (Pholiota) tuberculosus, Fries, Syst. Myc., i. p. 244; Cke., Hdbk., p. 146; Cke., Illustr., pl. 370A; Fries, Icones, ii., p. 4, t. 104, f. 2.

On trunks, chiefly birch.

Solitary. Stem hollow, scarcely exceeding an inch in length, 2–3 lines thick, base bulbous, incurved, fibrillose, rather squamulose, often excentric yellow. Ring submembranaceous, reflexed, deciduous, hence the species might be taken for a *Flammula*. Pileus compact, fleshy, but sometimes thin, slightly convex, soon plane, obtuse, sometimes depressed, 1–2 in. broad, very dry, tawny-yellow, glabrous, but broken up into innate adpressed scales. Gills sinuate behind, crowded, at first yellow, then foxy or ferruginous. Spores rusty-ochraceous. (Fries.)

Pholiota curvipoda. Alb. & Schw.

Pileus 1–2 in. across, flesh thin, yellowish, convex then expanded, obtuse, becoming broken up into minute, adpressed, floccose scales, tawny-yellow; gills broadly adnate, crowded, 2 lines broad, at first yellowish then tawny; stem 1–2 in. long, incurved more or less, 1–2 lines thick, fibrillose, ring floccose, yellow, hollow; spores ferruginous.

Agaricus curvipes, Albertini & Schweinitz, Consp., p. 471; Fries, Icones, p. 3, pl. 104, f. 3; Cke., Hdbk., p. 146; Cke., Illustr., pl. 370B.

On trunks.

Gregarious, subcaespitose, inodorous, very variable. Stem hollow, 1–2 in. long, 1 line thick, equal, crowded, (rarely almost straight, as in the fig Icon., pl. 104, f. 3) tough, fibrillose or slightly squamulose, yellow. Ring rarely evident, usually consisting of radiating fibrils, soon evanescent; and hence easily mistaken for a *Flammula*. Pileus fleshy, thin, but rather firm and tough, convex then plane, 1–2 in. broad, obtuse, dry, tawny-yellow. Pileus when young entirely innato-flocculose, then torn into minute scales. Gills obtusely adnate, crowded, broad behind, yellow, sides pale, at length tawny. Spores ferruginous. (Fries.)

Pholiota cruentata. Cke. & Sm.

Pileus about 2 in. across, fleshy, convex then expanded, obtuse, dry, yellow, breaking up into darker adpressed scales, margin incurved; gills rather distant, emarginate, 2–3 lines broad, yellow then tan-colour, finally separating from the stem; stem of the same colour as the pileus, curved, 1½–2 in.

long, 3 lines thick at the apex, curved, solid, attenuated at the base and rooting, dark red-brown and sparsely squamulose below; flesh pale yellow, at length changing to cinnabar colour; ring superior, fibrillose.

Agaricus (*Pholiota*) *cruentata*, Cooke & Smith, Grev., xiii. p. 58; Cke., Hdbk., p. 146; Cke., Illustr., pl. 502.

On oak stumps, also on burnt ground.

Allied to *Pholiota tuberculosa* and *P. curvipoda*, but distinguished by the rooting dark red-brown base of the stem and the cinnabar-coloured flesh. Taste insipid.

*** *Hygrophani.*

Pholiota paxillus. Fr.

Pileus 3–5 in. across, rather compact, gibboso-convex, then expanded, even, moist, rather repand, dark cinnamon-colour; paler when dry; gills rather decurrent, crowded, broad, cinnamon; stem 4–6 in. long, ½ in. and more thick, slightly attenuated upwards, smooth, even, cinnamon, solid; ring superior, narrow, spreading.

Agaricus (*Pholiota*) *paxillus*, Fries, Epicr., p. 168; Bulliard, Champ. 543, f. 2; Cke., Hdbk., p. 147.

On trunks.

Solitary. Large, 3–5 in. broad, firm, entirely cinnamon-colour, pileus moist, becoming pale, silky when dry, at length depressed towards the centre. (Fries.)

Pholiota dissimulans. B. & Br.

Pileus ⅔–1 in. across, obtusely campanulate, then expanded with the margin involute, and often gibbous or obtusely umbonate, scarcely viscid, hygrophanous, lurid then becoming pale; flesh thin, white; gills sinuately adnate, at length decurrent, 2 lines broad, pallid tan; stem 1½–2 in. long, 1–1½ line thick at the apex, thickened downwards, white, cottony at the base, hollow; ring superior, erect, often persistent, white: spores elliptical, 7×4–$4 \cdot 5$ μ.

Agaricus (*Pholiota*) *dissimulans*, Berk. & Broome, Ann. of Nat. Hist., n. 1940; Cke., Hdbk., p. 147; Cke., Illustr., pl. 371.

On fallen sticks.

Distinguished by the lurid (dingy brownish-olive), slightly viscid, glabrous pileus and the straight white stem.

Pholiota Cookei. Fr.

Pileus 1–2 in. across, conical then convex, viscid when moist, dirty pale yellow or yellowish-white, clad with scattered, darker, adpressed scales; flesh thin, white; gills adnate, slightly ventricose, 1½ in. broad, pale, at length brown; stem about 2 in. long, and 2 lines thick, equal, fibrillose up to the very thin, imperfect, superior ring, whitish upwards, reddish-brown below; solid; spores narrowly elliptic-fusiform, brownish, 6 × 2·5 μ.

Agaricus (Pholiota) Cookei, Fries, Grev., vol. v. p. 56, t. 82, f. 1; Cke., Hdbk., p. 147; Cke., Illustr., pl. 354.

On the ground amongst grass, &c.

Solitary or in small clusters. Care must be taken not to confound the present species with some of the terrestrial species of *Flammula*. Distinguished from *Pholiota terrigena* by the absence of an olivaceous tinge on the gills.

Pholiota confragosa. Fr.

Pileus 1–1½ in. across, flesh thin, convex then plane, obtuse, hygrophanous, margin striate, rufous-cinnamon, tawny when dry, at first covered with minute, whitish floccose squamules, then naked; gills adnate, 1 line broad, very much crowded, reddish-brown; stem about 2 in. long, equal; below the distant ring obsoletely fibrillosely peronate, hollow, rufous, spores elliptic-oblong, ferruginous, 8 × 4 μ.

Agaricus (Pholiota) confragosus, Fries, Epicr., p. 169; Fries, Icon., ii. p. 4, pl. 105; Cke., Hdbk., p. 148.

On trunks, &c.

A very distinct and remarkable species. Subcaespitose, fragile. I have seen two forms: (1) Small (young), stem 1 in. long, 2 lines thick, fibrillosely peronate by the veil and terminating near the apex in a membranaceous, persistent, spreading ring, stem above the ring striate, naked. (2) (Old), stem up to 3 in. long, but slender, scarcely a line thick, and like the pileus, naked, ring collapsed. Colour cinnamon-rufous, tawny when dry. Gills adnate, linear, very narrow, much crowded, very thin, cinnamon-rufous, sometimes tinged with purple. (Fries.)

Pholiota mutabilis. Schaeff.

Pileus variable in size, 1–4 in. across, fleshy, convex then expanded, usually obtusely umbonate, sometimes depressed round the umbo, glabrous, deep cinnamon-colour, becoming pale; gills adnato-decurrent, crowded, rather broad, pallid then cinnamon-colour; stem $1\frac{1}{2}$–4 in. long, rigid, equal, squarrosely scaly up to the superior membranaceous ring, brownish below, pale upwards, hollow, often incurved and ascending; spores 9–11 × 5–6 μ.

Agaricus mutabilis, Schaeffer, t. 9; Cke., Hdbk., p. 148; Cke., Illustr., pl. 355.

On trunks, rarely on the ground.

Caespitose. The pileus is sometimes covered with seceding scales.

Densely caespitose; stature various, stem rigid, stuffed then hollow, about 2–3 in. long, 2 lines and more thick, equal or attenuated downwards, squarroso-squamulose up to the ring, blackish-ferruginous or umber below, often ascending or wavy. Ring membranaceous, minutely scaly outside. Pileus rather fleshy, convex then expanded, commonly obtusely umbonate, sometimes truly depressed, even and glabrous, but when young sometimes entirely covered with squamules, about 2 in. broad, hygrophanous, cinnamon when moist, becoming pale when dry. Gills adnato-decurrent, crowded, rather broad, pallid then cinnamon. (Fries.)

Pholiota marginata. Batsch.

Pileus about 1 in. across, rather fleshy, convex then expanded, moist, hygrophanous, glabrous, margin striate, honey-colour becoming pale tan when dry; gills adnate, crowded, about 1 line broad, watery cinnamon; stem $1\frac{1}{2}$–2 in. long, 1–2 lines thick, equal or slightly thickened at the base, soft, not scaly, mealy above the superior, fugacious ring, pale tan, base darker and surrounded with white down, hollow; spores 7–8 × 4 μ.

Agaricus marginatus, Batsch, f. 207; Cke., Hdbk., p. 148; Cke., Illustr., pl. 372.

On trunks, pine leaves, &c. Solitary or gregarious.

Closely allied to *Pholiota mutabilis*, but constantly diverse, commonly smaller, solitary or gregarious, rarely caespitose. Stem fistulose, about 2 in. long, 1–2 lines thick, equal, less

rigid than in *P. mutabilis*, fibrillose or slightly striate, never scaly, coloured like the pileus, but brownish at the base and commonly white and velvety. Ring 1–2 lines from the apex, often curtain-like and fugacious. Pileus rather fleshy, convex then expanded, obtuse, 1 in. and more broad, even, glabrous, hygrophanous, paler than *P. mutabilis*, honey-colour when moist, when dry tan-colour. Gills adnate, crowded, thin, narrow, at first pallid, then obscure cinnamon. Very variable, and difficult to determine when the veil has disappeared. (Fries.)

Philiota mustelina. Fr.

Pileus about ½ in. across, rather fleshy, campanulate then convex, even, glabrous, dry, tawny-yellow; gills adnate, rather distant, about 1 line broad, tawny-cinnamon; stem ¾–1 in. long, not 1 line thick, slightly thickened and furnished with white down at the base, pallid-whitish, mealy above the reflexed ring.

Agaricus (*Pholiota*) *mustelinus*, Fries, Epicr., p. 169; Cke., Hdbk., p. 148; Cke., Illustr., pl. 356A.

On stumps.

On pine wood, rare and solitary. Pileus yellow, ochraceous, scarcely hygrophanous. (Fries.)

Pholiota unicolor. Fl. Dan.

Pileus about ½ in. across, flesh thin, campanulate, then convex, slightly umbonate, glabrous, almost even, at length slightly striate at the margin, hygrophanous, bay, ochraceous when dry; gills adnate, seceding, broad, almost triangular, ochraceous-cinnamon; stem 1–1½ in. long, about 1 line thick, almost glabrous and equal, coloured like the pileus, stuffed then hollow, *often slightly curved at the base*; ring superior, slender, entire; spores 9–10 × 5 μ.

Agaricus unicolor, Flora Danica, t. 1071, fig. 1; Cke., Hdbk., p. 149; Cke., Illustr., pl. 356B.

On trunks, branches, &c.

Subcaespitose. In Cooke's figure quoted above some of the specimens are 1 in. across, and the gills are adnate with a distinct decurrent tooth.

Always small, slender, subgregarious. Stem stuffed then hollow, 1½ in. long, 1 line thick, equal, even, almost glabrous,

colour of the pileus. Ring membranaceous, entire, very small, persistent. Pileus fleshy, campanulato-convex, subumbonate, 3–5 lines broad, glabrous, almost even, bay then ochraceous; gills slightly adnexed, ventricose, broad, pallid ochraceous. (Fries.)

C. MUSCIGENI.

Pholiota mycenoides. Fr.

Pileus about ½ in. across, membranaceous, campanulate then convex, everywhere striate, hygrophanous, ferruginous, tawny or pale tan when dry; gills adnate, rather distant, narrow, ferruginous; stem about 1½ in. long, 1 line thick, glabrous, ferruginous, hollow, ring superior, membranaceous, white; spores 8–10 × 5–6 μ.

Agaricus (Pholiota) mycenoides, Fries, Cke., Hdbk., p. 149; Cke., Illustr., pl. 503B.

Among moss in swamps, &c.

In swamps amongst turf and sphagnum (with the stem elongated), gregarious. Very small, slender, ferruginous when growing, when dry sometimes tawny, at others becoming pallid, stem fistulose about 1½ in. long, ½ line thick, filiform, even, glabrous, tawny-ferruginous; ring membranaceous, entire, white, persistent. Pileus membranaceous, campanulate, soon hemispherical, subobtuse, ½ in. broad, glabrous, striate, hygrophanous. Gills adnate and with a decurrent tooth, rather distant, at length plane, ferruginous. (Fries.)

Pholiota pumila. Fr.

Pileus about ½ in. across, rather fleshy, hemispherical, obtuse, even, hygrophanous, glabrous, ochraceous or rarely brownish-cinnamon; flesh dingy; gills adnate, crowded, 1½ line broad, pallid-yellowish; stem 1–2 in. long, about 1 line thick, yellow subfibrillose, hollow; ring superior, floccose, not membranaceous, only forming a zone round the stem; spores 8–10 × 5–6 μ.

Agaricus (Pholiota) pumila, Fries, Mon., i. p. 321; Fries, Icones, ii. p. 5, pl. 105 (form with brownish-cinnamon pileus); Cke., Hdbk., p. 149; Cke., Illustr., pl. 503A.

On the ground among grass, moss, &c.

Small, solitary or gregarious, stem obsoletely fistulose, 1–2 in. long, scarcely a line thick, equal, lax, even, glabrous, yellowish, ring floccose in texture, forming a zone round the stem, white. Pileus rather fleshy for its size, campanulate then hemispherical, 4–5 lines broad, even, glabrous, not moist. Colour normally ochraceous, but brownish cinnamon in specimen figured (in Icones, pl. 105, f. 4); gills entirely adnate, at first ascending then plane, crowded, pallid. At once distinguished from all preceding species by the floccose, not membranaceous ring. (Fries.)

ACETABULARIA. (Berk.)

Pileus regular; gills free from the stem; stem central; universal veil present, remaining as a volva at the base of the stem; spores tawny or brown.

Acetabularia, Berk., Linn. Journ., xviii., p. 389; Cke., Hdbk., p. 139.

Locellina, Sacc., Syll., vol v., p. 761.

Analogous with the genus *Amanitopsis* amongst the *Leucosporae*.

The present genus was founded—as a subgenus—by Berkeley for the reception of brown or ochraceous spored agarics furnished with a volva, and having free gills. The genus *Locellina*, Gillett, founded for the reception of a rusty-spored species having a universal veil that remains at the base of the stem as a volva, differs from *Acetabularia* in having a secondary veil and adnate gills, nevertheless Saccardo has made the mistake of sinking Berkeley's genus, and placing the species in *Locellina*.

Acetabularia acetabulosa. Berk.

Pileus about 1 in. across, convex, tan-colour, margin plicate or deeply striate; flesh very thin; gills free, but coming close up to the stem, distant, $1\frac{1}{2}$ line broad, pale brown; stem about 2 in. long, equal, white, hollow, the base surrounded by a small, whitish volva.

Agaricus (*Acetabularia*) *acetabulosa*, Berk., Linn. Journ., v. 18, p. 389; Cke., Hdbk., p. 139; Cke., Illustr., pl. 345 (copied from Sowerby).

Agaricus acetabulosus, Sow., pl. 303.

Found near Millbank, Westminster. A little above high-water mark, in May 1795. This is very like a poor specimen of *Agaricus congregatus* (*Coprinus micaceus*), but the pileus is more plaited. The lamellae are remarkably glandular on their sides; and instead of a bare base or foot it stands in a little socket-like volva. (Sowerby.)

The present species has not been noted since Sowerby's time, and is a very uncertain production. Judging from the magnified section of the gills, the glands on their sides are cystidia.

RHODOSPORAE.

The pale flesh-coloured or salmon-coloured gills is the distinguishing feature of the present section. The gills, as in every section of the Agaricinae, are white when young, the colour presented at maturity being due to the colour of the spore-wall or epispore, and in the present section, unless care is taken, many pale-gilled species may be considered as belonging to the Leucosporae, especially if examined while still vigorous and growing, but such, when allowed to remain overnight in a cool place, show clearly the salmon-coloured gills in the morning.

The spores are in some species elliptical and smooth; in others globose or oblong and angularly warted. The pink colour is evident under the microscope. Cystidia are present in the hymenium of many species.

The present section is, numerically, the smallest included in the Agaricinae, and generally speaking, the species are somewhat rare. The usual sequence of structure is met with, commencing with stemless, resupinate, minute forms, passing through types showing decurrent, adnate, sinuate, adnexed, and free gills respectively. In the high forms primary or secondary veil is present, hence volvate and annulate species exist.

ANALYSIS OF THE GENERA.

A. *Gills decurrent.*

* *Stem excentric or absent.*

Claudopus.—Species minute.

** *Stem central.*

Eccilia.—Pileus umbilicate; stem with a polished cartilaginous bark.

Clitopilus.—Stem fibrous.

B. *Gills adnate or adnexed.*

Leptonia.—Gills adnexed, soon separating from the stem; margin of pileus incurved when young.

Nolanea.—Gills adnexed, soon separating from the stem; margin of pileus straight when young.

Entoloma.—Gills sinuate, adnexed; margin of pileus incurved when young; stem fibrous.

C. *Gills free from the stem.*

Pluteus.—Volva and ring both absent.

(**Annularia.**—Stem without a volva, but furnished with a ring.)

Volvaria.—Stem with a distinct free volva at the base, ring absent.

CLAUDOPUS. W. G. Sm. (*figs. 1–3, p. 236.*)

Pileus excentric, lateral, or resupinate; stem very short entirely absent; gills pink, sinuate or decurrent; spores smooth or warted.

Claudopus, Worthington G. Smith, Clavis Agaricin., p. 17; Cke., Hdbk., p. 138.

The species are minute, and distinguished by the excentric or resupinate pileus, and rudimentary or obsolete stem. Agreeing in structure with the degraded forms of *Pleurotus*, but distinguished by the pink spores.

Claudopus variabilis. Pers.

Pileus $\frac{1}{4}$–$\frac{3}{8}$ in. across, at first resupinate and fixed by the pileus, then more or less reflexed and often with a very short stem-like base, silky with white down, margin incurved, very thin, *often* wavy; *gills narrow, radiating from the* point of attachment, rather distant, white then pale salmon-colour; spores elliptical, smooth, $3 \times 2\ \mu$.

Agaricus variabilis, Persoon, Obs., 2, t. v. f. 12; Cke., Hdbk., p. 138; Cke., Illustr., pl. 344A.

FIGURES ILLUSTRATING THE *RHODOSPORAE.*

Fig. 1, *Claudopus depluens;* a large specimen; nat. size;—Fig. 2, section of same; nat. size;—Fig. 3, spores of same; × 400;—Fig. 4, *Pluteus pellitus* and section of same; nat. size;—Fig. 5, spores of same; × 400;—Fig. 6, *Nolanea pascua;* half nat. size;—Fig. 7, section of same; half nat. size;—Fig. 8, spores of same; × 400;—Fig. 9, *Volvaria*

On dead wood, branches, &c.

The gills remain for some time white, and is then liable to be mistaken for a *Pleurotus*.

Pileus rather fleshy, resupinate then reflexed, furnished with a short, incurved, villous stem springing from the centre; when the pileus is reflexed the stem becomes obliterated. Gills at first radiating from an excentric point, then meeting at the base, broad, rather distant, whitish then rubiginous; often persistently sterile, when the gills remain white. (Fries.)

Pileus half an inch to above one inch in breadth, round, or reniform, entire, sessile, resupinate at first, becoming gradually reflexed, so as ultimately to be only attached by its side, or obliquely by a small portion of its upper surface; very thin, membranaceous, delicate, pure white, downy; flesh almost none. Lamellae rather numerous, narrow, much accuminated as they approach the margin; at first white, gradually changing to a reddish colour tinged with pink, darkest towards the base, their common point of origin excentrical. A very variable species, both in size, form, and mode of attachment. The prevailing characters are mentioned in the description: but the mycologist must be prepared to find it very whimsical. Fries says that it is sometimes furnished, when young, with a short, central, incurved stipes, which becomes lateral and obliterated, after the pileus is reflexed. The substance, delicate texture, and colour, are constant. (Grev.)

Claudopus depluens. Batsch. (figs. 1–3, p. 236.)

Pileus up to ½ in. across, almost membranaceous, more or less convex and with the margin incurved, rather silky, whitish or with a tinge of red, hoary, either sessile or usually with a short downy, pale stem; gills broad, ventri-

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volvacea: showing the large, loose volva at the base of the stem; nat. size;—Fig. 10, *Volvaria temperata*, section; nat. size;—Fig. 11, *Clitopilus prunulus*, section: half nat. size;—Fig. 12, *Eccilia carneo-grisea*, half nat. size;—Fig. 13, spores of same; × 400;—Fig. 14, *Leptonia aethiops*, half nat. size;—Fig. 15, section of same; half nat. size;—Fig. 16, *Entoloma prunuloides*, portion of section; half nat. size;—Fig. 17, *Entoloma placenta*, pileus; half nat. size.

cose, crowded, grey then reddish; spores globose, coarsely nodulose, 5–6 μ diameter.

Agaricus depluens, Batsch, Consp., f. 122; Cke., Hdbk., p. 139; Cke., Illustr., pl. 344B.

On the ground, usually attached to moss.

Very variable, sometimes with a central stem. Flesh thin; watery, fragile. (Fries.)

Distinguished from *C. variabilis* by the presence of a stem, and more especially by the globose, warted spores. Cooke's figures represent this species growing on wood.

Claudopus byssisedus. Pers.

Pileus up to ¾ in. across, flesh rather thick, resupinate then horizontal, reniform, plane, downy, grey becoming pale, margin usually incurved; stem lateral, very short, incurved, with white down at the base; gills adnato-decurrent, rather broad, grey then with a pink tinge; spores globose, angularly warted, 6–7 μ.

Agaricus byssisedus, Persoon, Ic. Descr., t. 14, f. 4; Cke., Hdbk., p. 139; Cke., Illustr., t. 344C.

On rotten wood, and on the ground.

Distinguished by the grey pileus, resembling somewhat *Pleurotus applicatus*, but distinguished by the stem and pink spores.

Resupinate when young, stem incurved, villous, attenuated upwards, more distinct (¼ in. long) and persistent than in *Ag. depluens*, clothed at the base with white down, exactly as in *Ag. dictyorhizus*, with which the present is exactly analogous. Pileus rather fleshy, at length horizontal, reniform, plane, ¼–1 in. broad, even, villous, grey, pale when dry, flesh same colour, thin. Gills adnato-decurrent, ventricose, rather broad, greyish-white, then reddish from the spores. (Fries.)

ECCILIA. Fries. (figs. 12, 13, p. 236.)

Pileus thin, at first umbilicate, margin incurved when young; gills narrowed behind, truly decurrent, not seceding when the pileus is much depressed, pinkish or salmon-colour; stem central, cartilaginous, tubular (tube stuffed or hollow),

more or less expanded upwards into the pileus; spores smooth or warted.

Eccilia (as a subgenus of *Agaricus*), Fries, Syst. Myc., i. p. 207.

A small genus, allied to Clitopilus in the decurrent gills. For distinctive features see under last-named genus.

Corresponding in structure with *Omphalia* in the Leucosporae.

Eccilia Parkensis. Fr.

Pileus about ¾ in. across, very thin, plano-convex, deeply umbilicate, very glabrous (not at all fibrillose), striate to the middle, brown when moist, blackish when dry, not hygrophanous; gills decurrent, crowded, distinct, about 1 line broad, whitish then dingy flesh-colour; stem about ¾ in. long, hollow, not 1 line thick, attenuated downwards, glabrous, not punctate, brown; spores subglobose, coarsely nodulose, rosy, 8–10 μ diameter.

Agaricus (*Eccilia*) *Parkensis*, Fries, in Vet. Ac. Förh., 1852; Cke., Hdbk., p. 136; Cke., Illustr., pl. 380A.

Grassy places.

A small species. Stem cartilaginous, hollow, scarcely 1 in. long, not 1 line thick, attenuated downwards, glabrous, not punctate, fuscous. Pileus membranaceous, plano-convex, deeply umbilicate, very glabrous, scarcely 1 in. across, striate to the middle, fuscous when moist, blackish when dry, but not at all hygrophanous. Gills about a line broad.

Not easily comparable with any other species. Readily distinguished from allies by the pileus not becoming pale when dry. (Fries.)

Eccilia carneo-grisea. B. & Br. (figs. 12, 13, p. 236.)

Pileus ⅔–1 in. across, convex and umbilicate, finely striate, greyish flesh-colour, margin darker with micaceous particles; flesh very thin; gills slightly decurrent, distant, rather undulate, pinkish salmon-colour; margin irregular, darker; stem 1½–2 in. long, 1 line thick, slightly thickened and covered with white down at the base, polished, coloured like the pileus, hollow; spores irregularly oblong, nodulose, $7 \times 5\ \mu$.

Agaricus (*Eccilia*) *carneo-griseus*, B. & Br., Ann. Nat. Hist.

(1865), pl. xiii., fig. 1; Cke., Hdbk., p. 136; Cke., Illustr., pl. 380B.

Among fir leaves, &c.

Gregarious: stem sometimes slightly wavy, shining.

Eccilia griseo-rubella. Lasch.

Pileus about 1 in. across, membranaceous, deeply umbilicate, at length plane, striate, hygrophanous, umber, hoary when dry; gills rather broad, slightly decurrent, rather distant, pallid then salmon-colour; stem 1½–2 in. long, equal, smooth, paler than the pileus, hollow; spores angularly globose, warted, 9–10 μ diameter.

Agaricus griseo-rubellus, Lasch, in Fries, Hym. Eur., p. 212; Cke., Hdbk., p. 136; Cke., Illustr., pl. 613A.

On the ground in pine woods, &c.

Gregarious, inodorous. Stem hollow, 2 in. long, 1 line thick, equal, even, glabrous, almost naked, colour of the pileus or a little paler. Pileus membranaceous, deeply umbilicate, margin at first arched then plane, 1 in. and more across, striate, hygrophanous, umber or brown when moist, grey when dry. (Fries.)

Eccilia atrides. Lasch.

Pileus submembranaceous, plane, deeply umbilicate, striate, black or brown, becoming pale, virgate or finely streaked with black; gills deeply decurrent, narrowed behind, rather crowded, pallid, margin black, minutely toothed; stem hollow, pallid upwards and dotted with black points.

Agaricus (*Eccilia*) *atrides*, Lasch, in Fries, Hym. Eur., p. 212; Cke., Hdbk., p. 137.

In moist woods.

A small species, respecting which more information is desirable. Fries suggests that it may be a modified form of *Leptonia serrulata*.

Eccilia nigrella. Pers.

Small, somewhat tufted, pileus smooth, umbilicate, growing blackish, not punctate with black; gills flesh-coloured then somewhat cinereous, with the edge of the same colour; stem short, glaucous.

Agaricus nigrella, Persoon, Syn., p. 463; Cke., Hdbk., p. 137; Berk. & Broome, Ann. Nat. Hist., no. 1651.

In pastures.

United by Fries with *Eccilia atrides*, but considered distinct by Berkeley and Broome.

This appears to be quite distinct from *E. atrides;* the stem is not nigro-punctate above, nor are the gills nigro-denticulate. (B. & Br.)

Eccilia rhodocylix. Lasch.

Pileus about ½ in. across, very thin, deeply umbilicate or even infundibuliform, margin reflexed, hygrophanous, brownish and remotely striate when moist, minutely flocculose and grey when dry; gills deeply decurrent, very distant, broad, few, with shorter ones alternating, whitish then flesh-colour; stem up to 1 in. long, ½ line thick, thickened upwards, tough, glabrous, grey, stuffed; spores subglobose, warted, 10 μ diameter.

Agaricus (Eccilia) rhodocylix, Lasch, no. 567; Cke., Hdbk., p. 137; Cke., Illustr., pl. 343A.

On rotten trunks, &c.

Distinguished by its habit, and very distant gills.

A remarkable and very distinct species. Stem cartilaginous, tough, stuffed with soft pith, up to 1 in. long, ½ line thick, thickened upwards, glabrous, grey; pileus membranaceous, deeply umbilicate, or almost infundibuliform, margin reflexed, about ½ in. across, hygrophanous, brownish and remotely striate when moist, flocculose and grey or whitish when dry. Gills broad, few, the alternate ones shorter.

Analogous with *Omphalia umbellifera*, but readily distinguished by the rosy spores. (Fries.)

Eccilia atropuncta. Pers.

Pileus ¼–⅜ in. across, rather fleshy, soft, hemispherical, sometimes slightly umbilicate, smooth, even, pale grey; gills decurrent, distant, arcuate, the alternate ones shorter, greyish flesh-colour; stem about 1½ in. long, attenuated downwards, or sometimes almost equal, rather tough, pallid, shining, sprinkled with black, point-like squamules, solid; spores angularly globose, apiculate, 5–6 μ diameter.

Agaricus atro-punctus, Persoon, Syn., p. 353; Cke., Illustr., pl. 343A; Cke., Hdbk., p. 137.

Amongst moss in woods, &c.

Gregarious, small, pileus ¼–¾ in. across. Taste disagreeable, whole plant brittle, and the pileus inclined to be somewhat irregular. (W. G. Sm.)

Introduced Species.

Eccilia flosculus. W. G. Sm.

Pileus about ⅜ in. across, somewhat membranaceous, pruinose with crystalline particles, deeply umbilicate, somewhat irregular, black-brown, becoming white with age; gills decurrent, somewhat waved, thick, pink; stem about ¾ in. long, attenuated downwards, pruinose or innately fibrillose, cartilaginous with a fleshy pith, reddish; spores nodulose.

Agaricus (*Eccilia*) *flosculus*, W. G. Smith, Journ. Bot., vol. iv., new ser., p. 97, pl. 161, f. 4–9; Cke., Hdbk., p. 138; Cke., Illustr., pl. 613B.

On the ground at the foot and upon the stems of tree ferns (*Dicksonia antarctica*) at Messrs. Veitch's Nursery, Chelsea, June, 1870. Allied to the next, but a very different plant; the dark-brown trama and external pruinoso-crystalline stratum are characteristic. (W. G. Sm.)

Eccilia acus. W. G. Sm.

Pileus up to ¼ in. across, somewhat membranaceous, deeply umbilicate, densely pruinose, white, margin striate and incurved; gills thick, distant, deeply decurrent, pink; stem about 1 in. long, not ¼ line thick, cartilaginous, smooth, whitish; spores oblong, angular.

Agaricus (*Eccilia*) *acus*, W. G. Smith, Journ. Bot., vol. iv., new ser., p. 97, pl. 161, f. 14–20; Cke., Hdbk., p. 138; Cke., Illustr., pl. 613C.

Amongst germinating coffee-seeds in cocoanut fibre, Royal Gardens, Kew.

This interesting and distinct plant was gathered by the Rev. M. J. Berkeley, in August, 1873, and placed in our hands for illustration. It differs in its snow-white pruinose pileus, and in other characters, from all other described species. Its nearest ally is *A. carneo-griseus*, B & Br (W. G. Sm.)

CLITOPILUS. Fries. (fig. 11, p. 236.)

Pileus more or less excentric or regular, margin at first involute; gills more or less decurrent, never sinuate nor seceding from the stem, salmon-colour; stem fleshy or fibrous, not polished and cartilaginous externally, central, expanded upwards into the flesh of the pileus; spores smooth or warted.

Clitopilus, Fries, Epicr., p. 148; Cke., Hdbk., p. 126.

Closely resembling *Eccilia*, differing mostly in the stem not being cartilaginous at the surface. Distinguished from *Entoloma* by the gills not being sinuate.

Agrees in structure with *Clitocybe* in the Leucosporae.

ANALYSIS OF THE SPECIES.

Orcelli.

Gills deeply decurrent. Pileus irregular, somewhat excentric, or wavy, scarcely hygrophanous, margin at first floccose.

Sericelli.

Gills adnate, slightly decurrent. Pileus regular, silky or atomate, margin involute, naked.

* ORCELLI.

Clitopilus prunulus. Scopoli. (fig. 11, p. 236.)

Pileus 2–4 in. across, truly fleshy, compact, convex then expanded, at length depressed, wavy or unequal, slightly pruinose, white or rarely greyish; flesh thick, white, unchangeable; gills very decurrent, narrow at both ends, but especially so behind, slightly crowded, quite entire, white then flesh-colour; stem solid, firm, somewhat ventricose, 1 in. and more long, about ½ in. thick, naked, often striate, white, base villose; spores elliptical, smooth, 7–8 × 5 μ.

Agaricus prunulus, Scop., Carn., 437; Cke., Hdbk., p. 126; Cke., Illustr., pl. 322.

In woods, &c.

Smell pleasant, resembling new meal. Edible.

Pileus 2–4 inches broad, convex more or less wavy, at length plane, sub-depressed, very fleshy, white, shining or opaque, with a slight tendency to cinereous, smooth, but under a lens minutely though densely tomentose, so that the impression of the finger is left upon it, margin involute. Gills decurrent, narrow more or less forked, covered with very minute conical papillae, ending in four spiculae. Sporules rose coloured, elliptic, often seated upon the spiculae. Stem, in general, short, white, solid, thickest at the base, and downy. Odour like that of fresh meal. (Berk.)

Clitopilus orcella. Bull.

Pileus up to 3 in. across, flesh thin, soft, plane then depressed, irregularly waved and lobed from the first, slightly silky, rather viscid when moist, white with a yellowish tinge, extreme margin usually incurved; gills deeply decurrent, crowded, about 1½ line broad, whitish then salmon-colour; stem under 1 in. long, ¼ in. and more thick, whitish, slightly flocculose, usually rather thickened upwards, solid; spores elliptical, smooth, 7 × 4 μ.

Agaricus orcella, Bulliard, t. 573, f. 1; Cke., Illustr., pl. 323; Cke., Hdbk., p. 126.

In open places among grass, &c.

Closely allied to *C. prunulus*, but distinguished by being usually smaller, stem shorter, often excentric, attenuated downwards, flocculose, pileus thinner, plano-depressed, irregular from the first, silky, rather viscid when moist, whitish-yellow, often spotted and zoned, margin at length undulately lobed, flesh soft, unchangeable, gills much crowded. Smell exactly like that of *C. prunulus*. (Fries.)

Pileus thin, irregular, depressed in the centre, lobed, undulated, 2–3 in. broad, clear white, sometimes tinted with pale brown on its prominences, occasionally with a grey centre, or slightly zoned with grey; surface soft and smooth to the touch, except in wet weather, when it becomes soft and sticky; flesh soft, colourless, and unchangeable; stem smooth, white, solid, short, decreasing in size, central when young, becoming excentric from the pileus growing irregularly; gills crowded, decurrent, at first nearly white, then

pinkish-grey, at length with a light brown tint; spores pale brown, ·00035 × ·00018 in., odour pleasant; smaller than *Clitopilus prunulus*, less fleshy, and grows in more open glades. (H. G. Bull.)

Clitopilus mundulus. Lasch.

Pileus 1–2 in. across, flesh thin, somewhat gibbous and convex when young, margin involute, minutely floccose, soon expanded and depressed, unequal, wavy and often excentric, even or rivulose; flesh soft, white, becoming blackish; gills very decurrent, very much crowded, narrow, thin, mixed with numerous shorter ones, pallid; stem stuffed, about 1 in. long, 2 lines thick, almost equal, floccosely villose, then becoming almost glabrous, base truly villose, white; spores elliptical, smooth, 10 × 5 μ.

Agaricus mundulus, Lasch, No. 518; Cke., Hdbk., p. 127; Cke., Illustr., pl. 375A.

In woods, among fallen leaves, &c.

Allied to *C. orcella*, but evidently distinct. Tough when young, pallid white, then greyish-spotted, at length blackish. (Fries.)

Clitopilus cretatus. B. & Br.

Pileus ¼–⅓ in. across, at first convex, then umbilicate, of a dead-white, but shining, membranaceous, margin involute, not striate; stem a few lines high, 1 line thick, often curved at the base and sometimes thickened, tomentose, especially below, white; gills pale pink, not broad, very decurrent; spores subglobose, smooth, 4–5 μ diameter.

Agaricus (*Clitopilus*) *cretatus*, B. & Br., Ann. Nat. Hist., n. 905 (1861); Cke., Hdbk., p. 127; Cke., Illustr., t. 375B.

On naked soil in woods and pastures.

Solitary or gregarious; mycelium white, floccose; allied to *Clitopilus prunulus*, but much smaller and more delicate.

Clitopilus popinalis. Fr.

Pileus 1–2 in. across, flesh thin, flaccid, convex then depressed, somewhat wavy, glabrous, opaque, grey, spotted and marbled; flesh greyish-white, unchangeable; gills very decurrent, broader than the thickness of the flesh of the pileus, lanceolate, crowded, dark grey, at length reddish from the spores; stem stuffed, 1–2 in. long, 2 lines thick, equal, often

flexuous, naked, paler than the pileus; spores subglobose, slightly angular, 4–5 μ.

Agaricus (Clitopilus) popinalis, Fries, Epicr., p. 149; Cke., Hdbk., p. 127; Cke., Illustr., pl. 485.

Among grass, &c.

Solitary or gregarious, smell pleasant, like new meal; entirely grey. (Fries.)

The pileus is often gibbous, or slightly but broadly umbonate, and with a pinkish-brown tinge.

Clitopilus undatus. Fr.

Pileus 1–1½ in. across, rather fleshy, undulate and often lobed, sooty-grey with a brown tinge, becoming pale, silky and opaque when dry; gills decurrent, thin, not crowded, dark grey with a pink tinge; stem about 1 in. long, 2 lines thick, attenuated towards the base, coloured like the pileus, hollow; spores globose, warted; 6–8 μ diameter.

Agaricus (Clitopilus) undatus, Fries, Epicr., p. 149; Cke., Hdbk., p. 127; Cke., Illustr., pl. 486.

Among grass.

Much smaller and slenderer than *Clitopilus popinalis*; inodorous. Stem entirely fibrous, not cartilaginous, scarcely 1 in. long, often very short, 1 or rarely 2 lines thick, fragile, unequal, often compressed, slightly attenuated and with white down at the base; pileus thin and deeply umbilicate, sometimes infundibuliform, unequal, undulate, about 1½ in. broad, not striate, becoming pale (not hygrophanous) and rather silky when dry, opaque, sooty-grey. Gills not crowded, distinct, 2 lines broad, margin quite entire. (Fries.)

Clitopilus cancrinus. Fr.

Pileus about 1 in. across, thin, almost membranaceous, at first convex with the margin involute, then almost plane, very much deformed, at length cracked and broken up on the surface, not striate, almost glabrous, but without a cuticle, hence minutely flocculose, not viscid nor zoned, whitish-tan or entirely white, becoming pale, not hygrophanous; gills truly decurrent, distant, distinct, broadest near the stem, rather thick, arcuate when young, then straight owing to the expansion of the pileus, white then flesh-colour; stem white, stuffed or partly hollow, short, straight or ascending,

round or compressed, scarcely 1 in. long, 1–2 lines thick, glabrous, base with white down; spores subglobose, angular, with an apiculus, 5–6 μ.

Agaricus (Clitopilus) cancrinus, Fries, Epicr., p. 149; Cke., Hdbk., p. 127; Cke., Illustr., pl. 501.

Among grass, &c.

Inodorous. A form is figured by Cooke differing from the typical state in having a longer stem attenuated into a slender, rooting base.

** SERICELLI.

Clitopilus carneo-albus. Wither.

Pileus up to 1 in. across, convex then expanded, centre becoming depressed and the margin drooping, even, polished, white, the disc becoming usually tinged with rufous; flesh thin; gills slightly decurrent, 1 line broad, crowded, salmon colour; stem 1–1½ in. long, 1 line thick, about equal, solid, white; spores globose, nodulose, 7–8 μ diameter.

Agaricus carneo-albus, Withering, Arr., iv. 218; (not of Fries); Cke., Hdbk., p. 128; Cke., Illustr., pl. 324B.

On heaths, &c.

Inodorous; gregarious. Size and habit very similar to *Eccilia atro-puncta*, but the colour is a purer white, and the gills less decurrent.

In the section given in Cke., Illustr., the stem is represented as being distinctly hollow.

Clitopilus vilis. Fr.

Pileus about 1 in. across, somewhat membranaceous, convex, umbilicate, soft, grey, silky-fibrillose when dry, opaque; gills slightly decurrent or adnate with a decurrent tooth, sometimes sinuate, almost triangular, crowded, whitish; stem hollow, 2–3 in. long, 1 line or a little more thick, equal, rather rough, splitting in a fibrillose manner, colour of the pileus, fibrillosely striate, base white, villous; spores 7–8 × 6 μ.

Agaricus (Clitopilus) vilis, Fries, Epicr., p. 150; Cke., Hdbk., p. 128; Cke., Illustr., pl. 487.

Among grass, moss, &c., in open places.

Resembling a *Leptonia* in the umbilicate pileus, but known from that genus by the decurrent gills.

Clitopilus straminipes. Mass.

Pileus 1–2 in. across, almost membranaceous, fragile, smooth, even, rather shining, whitish, at length expanded and depressed in the centre; gills shortly decurrent, scarcely crowded, whitish then rosy; stem about 2 in. long 1½ line thick, equal, smooth, often compressed, straw-colour below, sprinkled with white meal above, hollow; spores irregularly globose, nodulose, 10–12 μ diameter.

Agaricus (Clitopilus) straminipes, Massee, Grev., vol. xvi. p. 43.

Among grass.

Distinguished by the white, shining pileus and the pale straw-coloured stem.

Clitopilus stilbocephalus. B. & Br.

Pileus ⅔–1½ in. across, campanulate, obtuse, or sometimes slightly umbonate, margin straight, yellowish-white or greyish, sparkling with atoms, white and rather silky when dry; flesh rather thick; gills adnate or emarginate and adnexed, 1½–2½ lines broad, veined, salmon-colour; stem 2–3 in. long, 1½–2 lines thick, nearly equal, silkly fibrous, white, hollow; spores oblong, apiculate, angularly nodulose, 12 × 7–8 μ.

Agaricus (Clitopilus) stilbocephalus, B. & Br., Ann. Nat. Hist., 1879, p. 205, No. 1758; Cke., Hdbk., p. 128; Cke., Illustr., pl. 324B.

On the ground.

Distinguished by the pileus being covered with sparkling atoms, and the large angularly nodulose spores.

The gills are broadly adnate when young, but become ventricose with age, and then appear to be sinuate and adnexed. There is in all stages a more or less evident decurrent tooth.

Clitopilus Smithii. Mass.

Pileus ¾–1½ in. across, very soon becoming quite plane and orbicular, sometimes undulated, flesh rather thick except at the margin, even, atomate, whitish or with a dingy yellow tinge; gills broadly adnate with a slight decurrent tooth, 2 lines broad, salmon-colour; stem 2–3 in. long, 1½–2 lines thick at the base, tapering very slightly upwards, straight,

but the surface undulated, pallid, with a reddish tinge below, base white, downy; spores globose, smooth, 4 μ diameter.

Agaricus (Clitopilus) stilbocephalus, Berk. (variety), Cke., Illustr., pl. 599.

On the ground.

The present species is figured by Cke. from a drawing by Worthington G. Smith, as a var. of *Clitopilus stilbocephalus*, from which it is quite distinct in the plane pileus, coloured stem, and quite different spores; neither does it agree with any other known species.

LEPTONIA. Fries. (figs. 14, 15, p. 236.)

Pileus regular, thin, umbilicate, or with a dark disc, cuticle usually becoming broken up into darker scales or fibrils, margin at first incurved; gills adnate or annexed, but soon separating (or seceding) from the stem; stem glabrous, more or less polished, cartilaginous, hollow; spores smooth or rough.

Leptonia, Fries, Syst. Myc., i. p. 201; Cke., Hdbk., p. 129.

Rarely growing on wood, mostly on the ground, some in dry pastures, others in swampy places. Various tints of blue are common, also yellowish green. Distinguished from *Nolanea* by the margin of the pileus being incurved when young, also by the umbilicate pileus. Corresponding in structure to *Collybia* among the Leucosporae.

ANALYSIS OF THE SPECIES.

* Gills whitish. Pileus rather fleshy, not striate nor hygrophanous.

** Gills at first sky-blue, or with a blue tinge.

*** Gills pallid. Pileus becoming pale, yellow or greenish.

**** Gills grey or dusky.

* *Gills whitish; not hygrophanous.*

Leptonia placida. Fr.

Pileus 1–1¾ in. across, flesh thin, campanulate then convex, not striate, the blackish disc densely downy, the remainder covered with blackish fibrils or squamules on a greyish-white ground, squamules arranged concentrically at last; gills adnexed, very broad behind, not ventricose, crowded; whitish, as is also the margin; stem 2–3 in. long, 1½ line thick, equal, very rigid, having white meal at the slightly thickened apex, and with black points when seen under a lens, remainder glabrous, even, dark-blue or blackish-blue.

Agaricus (Leptonia) placidus, Fries, Epicr., p. 191; Cke., Hdbk., p. 129; Cke., Illustr., pl. 330.

On or near beech trunks, &c.

Leptonia lappula also has black points at the apex of the stem, but is distinguished from the present species by the umbilicate pileus.

Leptonia anatina. Lasch.

Pileus 1–1¾ in. across, campanulate, subumbonate, dark cinnamon, fibrillose or minutely squamulose; gills adnexed, seceding, rather broad, whitish then salmon-colour; stem 1½ in. high, 2–3 lines thick, imperfectly hollow, blue, darkest towards the smooth, even apex, remainder fibrillose; spores elliptic-oblong, smooth, pink, 8 × 5 μ.

Agaricus (Leptonia) anatina, Lasch, n. 561; Fries, Hym. Eur., p. 201.

On the ground.

Distinguished from *L. lappula* by the absence of black points at apex of stem.

Leptonia lappula. Fr.

Pileus about 1½ in. across, rather fleshy, convex then plane, umbilicate, not striate, flocculose when young, then with erect short fibrils that are crowded in the darker umbilicus, grey, often with a brown tinge; gills 2 lines broad, adnate with a decurrent tooth, separating from the stem, crowded, whitish, then dingy salmon-colour; stem about 2 in. long, 1½ line thick, slightly striate, brownish-lilac, apex naked and with black points; the stem is sometimes blackish-purple.

Agaricus (Leptonia) lappula, Fries, Epicr., p. 152; Cke., Hdbk., p. 129; Fries, Icones, pl. 97, f. 2.

Among beech leaves, &c.

Stem distinctly and widely hollow, 1½–2 in. long, 1–2 lines thick, equal, toughish; striate and blackish punctate at the apex under a lens, brownish-lilac or dark purple, base with white down. Pileus slightly fleshy, hemispherical, convex then plane and umbilicate, 1–1½ in. broad, not striate, at first softly floccolose, then with short erect fibrils at maturity, crowded and blackish at the disc, hence the pileus appears grey and with black points. Gills at first adnate with a tooth, usually more or less separating from the stem at maturity, very broad, crowded, distinct, greyish-white. (Fries.)

Leptonia lampropoda. Fr.

Pileus about 1 in. across, flesh thin, convex then expanded (not campanulate), obtuse, becoming depressed, almost even when young, never striate, at length more or less squamulose, mouse-colour or sooty-grey with a blue tinge, becoming paler but not hygrophanous; gills adnate, readily seceding and becoming almost free, ventricose, whitish then rosy; stem 1–1½ in. long, rather thick, up to 2 lines, entirely cartilaginous, glabrous, even, not punctate upwards, usually bluish-violet, hollow; spores irregular, 10–11 × 6–7 μ.

Agaricus (Leptonia) lampropus, Fries, Epicr., p. 152; Cke., Illustr., pl. 129; Cke., Hdbk., p. 331.

Among grass, &c.

Resembling *L. asprella*, but known by the stout stem, absence of striae on the pileus, also absence of an umbilicus. (Fries.)

Leptonia aethiops. Fr. (figs. 14, 15, p. 236.)

Pileus ½–1 in. across, flesh thin, plane then depressed, not striate, fibrillosely virgate, glabrous, shining, sooty-black, not hygrophanous, but young specimens are black and shining when dry; gills adnexed or adnate, straight or ventricose, whitish, edge same colour and quite entire; stem 1½–2 in. long, hardly a line thick, glabrous, blackish-brown, having black points near the top; spores irregular, 10 × 7 μ.

Agaricus (Leptonia) aethiops, Fries, Epicr., p. 152; Cke., Hdbk., p. 130; Cke., Illustr., pl. 332A.

Among grass, &c.

Distinguished from *L. lampropoda* by the pileus being depressed from the first and the slender stem with black points at its apex. From *L. serrulata* the present species is known by the pileus not being umbilicate, the absence of blue on the gills, &c. (Fries.)

Leptonia solstitialis. Fr.

Pileus up to ¾ in. across, flesh very thin except at the disc, soon becoming expanded and depressed round a central papilla or umbo, rugulose, innately fibrillose, pale brownish or fawn-colour; gills emarginate, 1½ line broad, whitish with a tinge of pink, margin same colour; stem about 1½ line long, 1 line thick, glabrous, not punctate with black at the apex, smoky, imperfectly hollow; spores irregular, 12–14 × 7 μ.

Agaricus (*Leptonia*) *solstitialis*, Fries, Epicr., p. 152; Cke., Hdbk., p. 130; Cke., Illustr., pl. 332B.

Among grass, &c.

Appears to be a distinct species, marked by absence of a blue tinge, and in not having the stem spotted with black points.

** *Gills bluish.*

Leptonia serrulata. Fr.

Pileus about 1 in. across, flesh thin, convex, umbilicato-depressed, not striate, squamulose, at first blackish-blue, smoke-colour when old, not hygrophanous, shining when dry; gills adnate, greyish-white, margin serrulate, black, at length greyish flesh-colour; stem about 1 in. long, 1 line thick, cartilaginous, imperfectly hollow, equal, glabrous, paler than the pileus, apex with black points, base with white down; spores irregular, 12–14 × 6–8 μ.

Agaricus (*Leptonia*) *serrulatus*, Fries, Epicr., p. 153; Cke., Hdbk, p. 130; Cke., Illustr., pl. 333?

Among grass, &c.

Rigid. Stem black or steel-blue, glaucous. Pileus at first blue-black, without striae, black and shining when old, but smoky and slightly striate when moist; paler and blackish-virgate when growing in woods. (Fries.)

In Cooke's figure, copied from a drawing made by the Rev. M. J. Berkeley, the pileus is 1–1½ in. across, umbilicate, margin vaulted, whitish with a lilac tinge, and slightly sprinkled with fibrils. Stem 3–4 in. long, 1½ line thick, rather flexuous, whitish with lilac tinge, hollow. Gills broad, adnate, salmon-colour; spores subglobose, warted, 9–10 μ diameter.

This does not agree with the type form, and may prove to be distinct.

Leptonia euchroa. Pers.

Pileus about ¾ in. across, rather fleshy, convex, obtuse, not striate, squamulosely fibrillose, at first violet then smoky-purple; gills adnate, very ventricose, plane, dark violet but becoming pale, the margin remaining dark; stem about 1½ in. long, 1 line thick, equal, glabrous, naked, even, tough, dark violet; spores oblong, coarsely warted, $10 \times 7–8\ \mu$.

Agaricus euchrous, Persoon, Syn., 343; Cke., Hdbk., p. 130; Cke., Illustr., p. 334.

On trunks and branches of hazel, &c.

Solitary or gregarious. Known from *L. chalybea* and *L. lazulina* by growing on wood.

Leptonia chalybea. Pers.

Pileus about 1 in. across, flesh thin, convex, somewhat umbonate, not striate, at first flocculose, then squamulose, dark violet or blackish-blue; gills adnate, crowded, broad, ventricose, greyish-white, margin slightly paler; stem 1½–2 in. long, about 1 line thick, cartilaginous, stuffed, rather firm, glabrous, even, steel-blue; spores $10 \times 6\ \mu$.

Agaricus chalybeus, Persoon, Syn., p. 343; Cke., Hdbk., p. 130; Cke., Illustr., pl. 325.

Among grass, &c.

In colour almost resembling *L. lampropoda*, but very different in structure, stem much more slender, &c.

Distinguished from *L. lazulina* by the pileus not being striate, and from *L. euchroa* by growing on the ground.

Sub-gregarious. Pileus ½–1 in. broad, convex, minutely umbonate, scaly, dark blue or almost black, subcarnose, slightly carnose on the margin; flesh dark-blue. Gills at first pale then clouded lightly of the colour of the pileus.

Sporules rose-coloured, elliptic with a globular nucleus. Stem 1½ in. high, 1 line thick, stuffed, at length hollow, indigo without, dark within, nearly smooth above, downy at the base. (Berk.)

Leptonia lazulina. Fr.

Pileus ⅝ in. across, submembranaceous, campanulate then expanded, obtuse, striate, at first glabrous, then becoming more expanded, obsoletely umbilicate, and torn into squamules, blackish smoke-colour, at first often blackish-blue or greyish-bay, the disc darker; gills adnate, seceding, crowded, pale blue, edge similarly coloured, equally attenuated from the margin to the stem; stem about 2 in. long, 1½ line thick, cartilaginous, hollow, glabrous, even, deep blue, base with white down; spores 10 × 6 μ.

Agaricus (*Leptonia*) *lazulinus*, Fries, Epicr., p. 153; Cke., Hdbk., p. 131; Cke., Illustr., pl. 549.

Among grass, &c.

Gregarious, fragile, about the size of *L. asprella*.

Allied to *Nolanea*. There are two forms; one with the pileus blackish-blue at first; the other bay-brown, the disc darker. (Fries.)

*** *Gills pallid.*

Leptonia incana. Fr.

Pileus about 1 in. across, somewhat membranaceous, fragile, convex then expanded, umbilicate, striate, glabrous, brown and green variegated, silky and becoming greyish when dry; gills adnate, with a decurrent tooth, at length seceding, 2–3 lines broad in the middle, plane, distant, greenish white then flesh-colour; stem 1–2 in. long, about 1 line thick, distinctly cartilaginous, even, glabrous, greenish or brownish-green; spores irregular, 8 × 9 μ.

Agaricus (*Leptonia*) *incanus*, Fries, Epicr., p. 154; Cke., Hdbk., p. 131; Cke., Illustr., pl. 336.

Among grass, moss, &c.

Elegant, gregarious. Pileus almost plane, the disc rarely fibrillose, fuscous variegated with green. According to Secretan, the stem is sometimes bluish.

Leptonia chloropolius. Fr.

Pileus up to 1 in. across, membranaceous, convex th expanded, striate, livid or yellowish-green, the disc wi blackish squamules; gills narrowed behind and adna pallid, then with a salmon-coloured tinge; stem 2–3 in. lon 1½ line thick nearly equal, even, glabrous, greyish-gree hollow; spores elliptic-oblong, rough, 7–8 × 5 μ.

Agaricus (Leptonia) chloropolius, Fries, Monogr., ii. p. 29 Cke., Illustr., pl. 337; Cke., Hdbk., p. 131.

Among grass in woods, &c.

Similar to *L. exilis* in colour but differing in importa points, also resembling *L. formosa* in size and form, but diff ing in colour, stem rather firm, rigid, 2–3 in. long, 1 li thick. Pileus 1 in. across, glabrous except the disc, marg at first incurved. Gills 2 lines broad, margin similar colour. Agreeing in many points with *L. asprella*, of whi it may possibly be a variety, but the habit is different, a no transitional forms have been seen, although both speci have been seen in quantities. (Fries.)

Leptonia formosa. Fr.

Pileus about 1 in. across, flesh thin, rather tough, conv then plane, umbilicate, striate, waxy-yellow, more or l covered with minute brownish or smoke-coloured, fibrill squamules; gills adnate, with a decurrent tooth, rat distant, pale yellow, then flesh-colour, edge quite entire a similar in colour, stem 2 in. long, about 1 line thick, equ even, glabrous, shining, yellow.

Agaricus (Leptonia) formosus, Fries, Epicr., p. 154; C Hdbk., p. 131.

In woods, especially pine.

Closely allied to *L. asprella*. The stem is sometin brownish or bluish. (Fries.)

Var. **suavis**, Lasch, no. 285; Cke., Illustr., pl. 488.

Pileus 1–2½ in. across, convex then expanded, umbilica fawn-colour, stem 3–4 in. long, 1–1½ line thick, equal, p greyish-blue, gills broad, adnate, salmon-colour; spo subglobose, nodulose, 10 μ diameter.

In swampy places.

It is doubtful whether the type form has occurred Britain.

**** *Gills grey or dusky.*

Leptonia asprella. *Fr.*

Pileus 1–1½ in. across, somewhat membranaceous, convex then expanded, umbilicate, and there obscurely downy then squamulose, sometimes glabrous (except the disc), sometimes fibrillose, hygrophanous, at first smoke-colour or mouse-colour, then livid-grey; gills adnate, seceding and becoming free, rather distant, plane, equally attenuate from the stem towards the margin, greyish white, edge quite entire, the same colour; stem 1–2 in. long, not more than 1 line thick, equal, straight, even, glabrous, cartillaginous, hollow, livid, fuscous, green and blue mingled, &c., base with white down.

Agaricus (*Leptonia*) *asprellus*, Fries, Epicr., p. 154; Cke., Hdbk., p. 132.

Among grass.

Some specimens have the pileus squamulose everywhere; some forms resemble a *Nolanea*, pileus hemispherical then campanulate, disc sometimes with a minute depression, sometimes with a papilla. (Fries.)

Leptonia nefrens. *Fr.*

Pileus 1–2 in. across, membranaceous, convex, then plane, at length infundibuliform, hygrophanous, not striate, slightly squamulose, often rather wavy, livid-sooty, darkest at the centre, pale livid when dry; gills adnexed, soon separating from the stem, broad, close, pale grey, margin quite entire, blackish; stem 1–1½ in. long, 1–1½ line thick, glabrous, livid-brown, hollow; spores elliptical, smooth, 4–5 × 3 μ.

Agaricus (*Leptonia*) *nefrens*, Fries, Syst. Myc., i. p. 209; Fries, Hym. Eur., p. 205; Cke., Hdbk., 132.

In damp places among grass, &c.

Allied to *L. serrulata*, but distinguished by the quite entire margin of the gills, and the absence of black points at the apex of the stem.

NOLANEA. Fries. (figs. 6–8, p. 236.)

Pileus regular, almost membranaceous, campanulate, more or less papillate, striate, or even and flocculose, margin at

first straight and pressed to the stem; gills adnexed or free, never decurrent; stem central, cartilaginous, hollow, the cavity sometimes filled with a floccose pith; spores with a pink or salmon tinge.

Nolanea, Fries, Syst. Myc., i. p. 204; Cke., Hdbk., p. 132.

Nolanea corresponds in structure with *Psathyrella*, *Psathyra*, *Galera*, and *Mycena*. Allied to *Leptonia*, but distinguished by the margin of the pileus being straight and pressed to the stem when young, and not incurved, and by the usually papillate or slightly umbonate pileus.

ANALYSIS OF THE SPECIES.

* Gills grey or with a fuscous tinge. Pileus dark, hygrophanous.

** Gills yellowish or with a rufous tinge.

*** Gills pure white, then rosy. Hygrophanous.

**** Gills whitish. Pileus not hygrophanous.

** Gills grey or dusky. Pileus dark, hygrophanous.*

Nolanea pascua. Pers. (figs. 6–8, p. 236.)

Pileus membranaceous, conical, then more or less expanded, smooth, hygrophanous, $\frac{3}{4}$–1 in. high, about the same across, livid bistre, paler when dry and silky, shining; gills rather crowded, almost free, salmon-colour, margin eroded; stem 1–2 in. long, fistulose, fragile, silky-fibrous, shining, slender, pale; spores irregularly nodulose, pink, 9–10 μ diam.

Agaricus (Nolanea) pascuus, Pers., Comm.; Schaeff., t. 229; Cke., Illustr., t. 376.

In pastures.

Inodorous. The above description covers the most general form, but the species is variable; sometimes the pileus is sooty and more or less fibrillose, stem similarly coloured, and gills greyish-pink. The distinctly fibrous stem is always constant, and at once separates this from every other species of *Nolanea*.

Everywhere in pastures and woods throughout the year, an exceedingly variable and changeable species, always watery (moist), very fragile, of a squalid colour, nearest to *Entoloma sericeum*. Stem fistulose, soft, usually 2–3 in. long, 1–2 lines thick (sometimes compressed), equal, silky-fibrous, or fibrillose when adult, striate, usually pale smoke-colour, not cartilaginous. Pileus membranaceous, somewhat acute, conical then expanded, but not flattened, usually umbonate, glabrous, smoky-grey and striate when moist, even, silky-shining, hoary or fawn-colour, becoming pale when dry; size very variable, the smaller forms hardly 1 in. across: the larger 2–3 in. broad, undulately lobed in luxuriant individuals. Gills very much narrowed behind, almost free, thin, crowded, ventricose, or especially towards the margin, broader and obtuse, grey or smoky-white, powdered with the rosy spores, but not tinged rosy. (Fries.)

Pileus 1 in. or more broad, subcarnose, brown, when dry changing to ochraceous-brown, umbonate, smooth, satiny not fibrillose, the margin striate when moist. Stem 1 in. high, stuffed minutely fistulose, when old quite hollow, and fibrillose within and without, often compressed, paler than the pileus. Sometimes the pileus is depressed and the gills appear decurrent. Odour like that of fresh meal. The above is a description of one state of the species, but it will not apply universally. The stem is sometimes much longer, and the gills vary much in shape. It occurs of various colours, and the form of the pileus is by no means constant. I have found specimens very much resembling *A. lanuginosus*, which though very different from the common state I imagine to be only a variety. The pileus is conico-campanulate, umbonate, umber-grey, decidedly silky, the gills adnate with a distinct tooth, or sub-adnexed, dull pink with a shade of umber, extreme margin white, scarcely serrulate. Stem pale, darker below, fibrillose. It has the same odour. Another form of the species, if not distinct, has very broad secedento-adnate gills, and a subfibrillose pileus. I can, however, find no other mark of distinction; this also has the mealy odour. (Berk.)

Nolanea Babingtonii. Bloxam.

Pileus about ½ in. across and a little more in height, flesh

very thin; conico-campanulate, pale grey, shining like silk, adorned with dark brown fasciculate fibrils which are free at one end, disc rather squamulose; gills adnate, ventricose, distant, grey, darker at the base; stem about 1 in. long, not 1 line thick, equal, somewhat strigose and covered with brown down, hollow, slightly wavy; spores subglobose or slightly oblong, apiculate, nodulose, 7–8 μ; cystidia absent.

Agaricus (*Nolanea*) *Babingtonii*, Bloxam, in Berk., Outl., p. 148; Cke., Hdbk., p. 133; Cke., Illustr., pl. 377A.

On the ground.

Berkeley says of the gills—"glistening with the white antheridia," presumably referring to projecting points in the hymenium, but I fail to find cystidia in the type specimens.

Nolanea mammosa. Fr.

Pileus ½–1 in. across, flesh very thin, conico-campanulate, acutely umbonate or papillate, slightly striate, glabrous, pale brown, pale dingy ochre and silky when dry; gills adnexed, 1 line broad, rather crowded, greyish with a pink tinge at maturity, separating from the stem; stem about 2 in. long, sometimes more, 1½ line thick at the apex, thinner downwards, rigid, shining, glabrous, fragile, apex powdered with white meal, hollow; spores oblong, nodulose, 7–8 × 5–6 μ; no cystidia.

Agaricus mammosus, Linneus; Fries, Spic., p. 7; Cke., Hdbk., p. 133; Cke., Illustr., pl. 377B.

Among short grass in open, sunny places.

Pileus tawny brown. Stem elongated, fragile, shining. (Cooke.)

Nolanea juncea. Fr.

Pileus about ¾ in. across, membranaceous, conical then expanded, radiately striate, sooty-umber, disc somewhat umbilicate or even papillate or umbonate, slightly squamulose; gills adnexed, seceding, about 1 line broad, rather distant, grey then purple-brown; stem 2–3 in. long, 1 line thick, equal, brown, hollow.

Agaricus (*Nolanea*) *juncea*, Fries, Syst. Myc., i. p. 208; Cke., Hdbk., p. 133; Fries, Icon., pl. 99, f. 2.

In swamps among *Sphagnum*, and in woods.

Fragile, inodorous. Stem cartilaginous, hollow, slender, 3 in. long, scarcely 1 line thick, equal, even, glabrous, brown or black, at length livid-brown. Pileus entirely membranaceous, conical then campanulate, cuspidate, not 1 in. across, striate, hygrophanous, blackish and shining when old. Gills ascending, adnexed, seceding, rather distant, grey then rosy. Remarkable for two distinct forms of pileus being found growing mixed together, one being cuspidate, the other umbilicate. The same thing is seen in *Omphalia campanella* and *O. fibula*. A third form has the gills greyish-brown then purplish. (Fries.)

Nolanea fulvo-strigosa. B. & Br.

Pileus up to 1 in. across, conico-campanulate, subumbonate, smooth, rugulose, ochraceous with an olive tinge (when dry); flesh very thin; gills adnexed, rather distant, 1½ line broad, greyish with a flesh-coloured tinge; stem about 2 in. long, about 1 line thick, equal, clad with mealy squamules, hollow, densely strigose at the base with reddish fibrils; spores elliptic-oblong, warted, apiculate at the base, 10 × 6 μ; cystidia conical, 45–50 × 7–8 μ, rare.

Agaricus (*Nolanea*) *fulvo-strigosa*, B. & Br., Ann. Nat. Hist., No. 1650; Cke., Hdbk., p. 134.

On the ground (Maidstone).

Remarkable for the strigose base of the stem, the fibrils being bright reddish-brown. The paper on which the specimens are preserved is tinged bright rose-colour.

Pileus ¾ in. across, ½ in. high; stem 2 in. high, about 1 line thick, clothed at the base with rigid red hairs, and tinted with the same colour above. Spores ·0005 long, ·0003 broad. The peculiar character of the strigae separates this from all other species. (B. & Br.)

** *Gills becoming yellowish or reddish.*

Nolanea pisciodora. Cesati.

Pileus up to 1 in. across, flesh rather thick at the disc, membranaceous elsewhere, conico-campanulate then convex or expanded, slightly umbonate, minutely velvety to the touch, tawny-cinnamon; gills slightly adnexed, 1½ line

broad, yellowish then pink, at length with a tawny tinge; stem 2–3 in. long, about 1 line thick, tough, nearly or quite straight, minutely pruinose, chestnut then blackish below, paler and minutely velvety upwards, indistinctly hollow.

Agaricus pisciodorus, Cesati, in Crypt. Ital., i. p. 61, t. 3, f. 2; Cke., Hdbk., p. 134; Cke., Illustr., pl. 378A.

Among leaves in woods, &c.

Smell strong, resembling stinking fish.

Fries considers the present species to be very close to *N. nigripes*, having the same smell, and differing only in colour. Judging from British specimens that agree with both species respectively, the present may be distinguished by the velvety feel of the pileus, and the thicker, straight stem being pale and rather velvety at the apex.

Speaking at the annual fungus foray meeting of the Woolhope Club, Dr. M. C. Cooke made the following remarks respecting certain species of *Nolanea* and *Naucoria*: "There are three or four closely similar forms to each other which have hitherto borne distinctive names, but which I am beginning to think do not deserve that honour. This group includes, as we know them, *Agaricus* (*Nolanea*) *pisciodorus*, Cesati; *Ag.* (*Nolanea*) *piceus*, Kalchbr.; *Ag.* (*Naucoria*) *cucumis*, Pers.; and *Ag.* (*Nolanea*) *nigripes*, Trog."

After an analysis of the specific diagnosis, Dr. Cooke says: "It must be observed that only one of these forms which departs from the type in any feature which would warrant specific distinction is the last [*Ag.* (*Nolanea*) *piceus*, Kalchbr.], which is the only truly aberrant form, in virtue of the robust stem, papillate pileus, and emarginate gills."

"If I might venture an opinion, based on the belief that *Ag. cucumis* is not really a good *Naucoria*, but rather a *Nolanea*, I should suggest that *Agaricus nigripes*, *pisciodorus*, and *cucumis* are varieties of one species, call it by whatever name you please, and that *Ag. piceus* has distinctive features which might warrant its retention as a fairly good species. At any rate, it is an open question, which merits investigation in the light of these suggestions." (Grev., vol. xix. p. 30.)

The above suggestions have not been adopted in the present work, notwithstanding the fact that, so far as an analysis of the respective existing specific characters is con-

cerned, I am quite in harmony with Dr. Cooke's views; but at the same time it will, I believe, be conceded that there are *certain specific features* that cannot be clearly expressed in writing, more especially when the points noted are (with the exception of the spores) what may be termed superficial; possibly a closer examination, including presence or absence of cystidia, form of basidia, existence of laticiferous cells or otherwise, may aid in elucidating this point.

Nolanea nigripes. Trog.

Pileus about 1½ in. across, almost membranaceous, rather tough, campanulate, obtuse, even, glabrous, 1½ in. broad, brown, covered with yellowish flocculent particles; gills *adnexed then free, ascending, thin, somewhat crowded,* ventricose, yellow then flesh-colour; stem 4–5 in. long, 1 line thick, equal, twisted, rather wavy, glabrous, black, hollow.

Agaricus nigripes, Trog, in Flora, 1834, p. 527; Cke., Hdbk., p. 372; Cke., Illustr., pl. 1170A; Fries, Icon., t. 99, f. 1.

In swampy places.

Odour resembling that of stinking fish.

Nolanea rufo-carnea. Berk.

Pileus up to 1 in. across, *flesh very thin,* hemispherical, umbilicate, slightly fibrillose, reddish-brown, margin slightly striate, gills adnexed, 1½ line broad, ventricose, veined, pale salmon-colour; stem about 2 in. long, 1 line thick, equal, slightly thickened at the base, pale reddish-brown, paler above, hollow; spores elliptic-oblong, apiculate, smooth, 9–10 × 6 μ; no cystidia.

Agaricus (Nolanea) rufo-carneus, Berk., Eng. Flor., vol. v. p. 81; Cke, Hdbk., p. 134; Cke., Illustr., pl. 378B.

On heaths, &c.

Pileus 1 in. broad, umbilicate, membranaceous, indistinctly fibrilloso-squamulose, margin striate, dark red-brown; gills adnate, ventricose, waved, rose-coloured, slightly connected and traversed by veins; sporules elliptic, rose-coloured. Stem 2½ in. high, 1 line thick, curved at the base, where it is slightly thickened, pale rufescent, nearly white above, fistulose, smooth, under a lens minutely fibrillose. Taste rather bitter. (Berk.)

Nolanea icterina. Fr.

Pileus ½–1½ in. across, rather firm, almost membranaceous, campanulate, soon convex, often becoming entirely reflexed, but not umbilicate, undulate and variously formed in vigorous specimens, glabrous, opaque, hygrophanous, pellucidly striate, yellowish-green, rarely honey-colour with a tinge of yellow, pale and slightly silky when dry; disc sometimes obtuse, at others papillate, often brown and with brown squamules; gills adnexed, seceding, ventricose, distant, pallid; stem 1–2 in. long, 1 line thick, stuffed, rigid, the apex only or every part mealy, colour of the pileus or brown; spores oblong, nodulose, 11–12 × 8 μ.

Agaricus (Nolanea) icterinus, Fries, Epicr., p. 157; Cke., Hdbk., p. 134; Cke., Illustr., pl. 338.

Among grass, also in cultivated places.

Usually somewhat caespitose, very variable, stem often compressed. Gills free, decurrent, anastomosing, &c., becoming saffron in decay.

Nolanea subglobosa. A. & S.

Pileus about ¾ in. across, rather fleshy, hemispherical, even, rather viscid, yellowish, gills nearly free, 2 lines or more broad; rhomboid, convex, flesh-colour with a yellowish tinge; stem about 1½ in. long, 1 line thick, equal, longitudinally striate, pale, becoming hollow; spores broadly elliptical, smooth, pale pink, 9 × 7 μ.

Agaricus subglobosus, Albertini and Schweinitz, p. 169; Grev., vol. xvii. p. 38; Cke., Illustr., pl. 1170B.

On the ground.

Distinguished by the subglobose, viscid, yellow pileus and broad gills.

*** *Gills white, then rosy. Pileus hygrophanous.*

Nolanea picea. Kalchbr.

Pileus up to 1½ in. broad, rather fleshy, scarcely hygrophanous, conical then campanulate, at length expanded, papillate, even, glabrous, black becoming paler at the margin, umber when dry; flesh tinged with umber; gills adnexed, ascending, with a short decurrent tooth, rather distant,

ventricose, 2 lines or more broad, at first pale then flesh colour; stem 1–2 in. long, 1–2 lines thick, almost equal or slightly thinner downwards, even, nearly glabrous, pitch-black, very slightly pruinose, rather tough, not straight, hollow; spores elliptical, smooth, 7–8 × 5 μ.

Agaricus (*Nolanea*) *piceus*, Kalchbr., Icon. Sel. Hym. Hung., p. 23, pl. xi., fig. 2; Cke., Hdbk., p. 135; Cke., Illustr., pl. 379A.

Among grass.

Smell strong, resembling cucumber or decaying fish. Allied to *N. pisciodora*, but distinguished by the glabrous, pitch-black pileus and stem when moist.

Nolanea infula. Fr.

Remarkably tough. Pileus up to ¾ in. across, membranaceous, conical then expanded, with a papilla or wart-like umbo, shining, almost even, hygrophanous, dark grey when moist, pale buff when dry; gills adnexed, not 1 line broad, closely crowded, snow-white then pink; stem about 2 in. long, rigid, glabrous, naked, brown, paler when dry, imperfectly hollow.

Agaricus infula, Fries, Sp., p. 8; Cke., Hdbk., p. 135; Fries, Icon., t. 100, f. 1.

On the ground in copses, &c.

Inodorous, sometimes small, with a filiform stem 1 in. long, sometimes larger and firmer, up to 3 in. high. Stem always remarkably cartilaginous, very tough, polished, glabrous, coloured like the pileus, even or slightly striate. Pileus membranaceous, tough, conical then expanded, often deformed in large specimens, centre becoming depressed, ½–1½ in. across, not striate, glabrous, sooty or brownish fawn-colour when moist, dingy ochraceous when dry, shining in both stages. Gills variable according to the state of expansion of the pileus, typically adnexed, or breaking away and becoming free, size very variable, but clearly distinguished from allies by its toughness, polished appearance, and whiteness of the gills. (Fries.)

Var. **versiformis**, Fries, Icon., p. 114.

Pileus convex then depressed or even infundibuliform, but persistently papillate, densely but slightly striate, silkily shining when dry.

Nolanea coelestina. Fr.

Pileus up to ⅜ in. across, flesh very thin, campanulate, obtuse or slightly umbonate, glabrous, margin striate and often plane or upturned with age, pale blue, disc darker and rather rough; gills adnexed, 1½ line broad, rather crowded, white then with a very slight tinge of pink; stem 1–1½ in. long, not a line thick, equal, often incurved at the base, even, glabrous, dark blue, apex mealy, hollow.

Agaricus (Nolanea) coelestinus, Fries, Epicr., p. 158; Cke., Hdbk., p. 135; Cke., Illustr., pl. 372B.

On wood, also in pine-woods, &c.

Solitary, inodorous. Stem soon hollow, 1½ in. long, scarcely a line thick, thinner upwards, apex with white meal, rest glabrous, even, blue-black. Pileus thin, campanulate, at length convex, obtuse, virgate, disc scabrid, blackish, remainder sky-blue, not hygrophanous. Gills adnate, ventricose, very broad, greyish-white, margin same colour. Spores pale rose-colour. A form growing in pine-woods is slenderer than the form on oak trunks. Very distinct from all other species of *Nolanea*. Resembling *Leptonia* in colour, but very distinct in structure. (Fries.)

Nolanea exilis. Fr.

Pileus up to ⅜ in. across, membranaceous, conical then expanded, striate, glabrous, livid-grey, the darker disc papillose; gills adnexed, rather crowded, whitish, then with a tinge of pink; stem 2–3 in. long, not 1 line thick, tough, glabrous, greyish-green, apex naked, hollow.

Agaricus (Nolanea) exilis, Fries, Syst. Myc., i. p. 206; Fries, Hym. Eur., p. 210.

Among grass, leaves, &c.

Allied to *N. chloropolia*, but more slender and delicate; pileus varying on lilac. A variety found among *Sphagnum* becomes elongated, and the margin of the gills becomes brownish. (Fries.)

(*a*) Among grass under beeches, &c., polymorphous. Stem hollow, 2–3 in. long, ½ line thick, tough, even, glabrous, naked, greyish-green; pileus membranaceous, umbonate, conical then expanded, ½ in. broad, striate when moist, even when dry (not hygrophanous), with sooty radiating lines from the dark papilla, the rest livid-greyish or with a lilac

tinge; gills adnate, separating readily from the stem, rather crowded, whitish, edge similarly coloured. (*b*) Among grass under pines; stem firmer and more rigid; pileus slightly striate, 1 in. across when expanded, livid, with black squamules in the centre; gills 2 lines broad. (*c*) In swamps. Very slender; stem filiform, weak and flexible, grey; pileus very slender, obtuse, greyish brown, then with a lilac tinge, disc darker, punctiform; gills adnexed, seceding, margin at length brownish. Although very slender, not hygrophanous. (Fries.)

Nolanea verecunda. Fr.

Pileus ½ in. across, somewhat membranaceous, disc rather fleshy, at first somewhat umbonate, then rather obtuse (never depressed), indistinctly pellucidly striate to the middle when humid, but the disc is always even, at first sight glabrous, but when carefully examined seen to be obsoletely silky towards the flocculose margin; watery reddish or pallid, not changing colour when dry; gills adnate, seceding, rather thick, distant, distinct, ventricose, segmentoid, 2 lines and more broad, slightly ascending, whitish, watery; stem 1½–2 in. long, 1–2 lines thick, rather firm, somewhat hollow, cartilaginous, not very rigid, and when rubbed between the fingers, splitting into fibrils, becoming pale, apex mealy.

Agaricus (*Nolanea*) *verecundus*, Fries, Epicr., p. 156; Cke., Hdbk., pl. 135; Cke., Illustr., pl. 340A.

Among grass.

**** *Gills whitish. Pileus not hygrophanous.*

Nolanea rubida. Berk.

Pileus about ⅓ in. across, flesh very thin, convex, at length expanded and umbilicate, minutely silky, whitish-grey then rufescent, even; gills adnate, attenuated behind, ventricose, sometimes slightly decurrent, whitish then salmon-colour; stem about ¼ in. long, thickest upwards; white, minutely silky, solid; spores elliptical, smooth, $4–5 \times 3\,\mu$; no cystidia.

Agaricus rubidus, Berkeley, Mag. Zool. and Bot., vol. i. t. 2, f. 2; Cke., Hdbk., p. 135; Cke., Illustr., pl. 340B.

On soil in hothouses.

Readily distinguished by its small size, and by the white pileus becoming rufescent with age or on drying. Smell of meal.

ENTOLOMA. Fries. (figs. 16, 17, p. 236.)

Pileus regular, rather fleshy, margin incurved at first; stem central, more or less fibrous; gills adnexed, sinuate or rounded behind, often seceding or separating from the stem, rosy or pale salmon-colour; spores elliptical and smooth or subglobose and coarsely warted, rosy or salmon-colour; cystidia rare; without a distinct veil.

Entoloma, Fries, Epicr., p. 143; Cke., Hdbk., p. 118 (as a subgenus of *Agaricus*).

Known amongst the *Rhodosporae* by the sinuate gills. Corresponding morphologically with the genera *Tricholoma*, *Hebeloma*, and *Hypholoma*.

Growing on the ground after heavy rains; many of the species have a smell resembling meal.

ANALYSIS OF THE SPECIES.

* GENUINI.

Pileus glabrous, moist or viscid; not hygrophanous.

** LEPTONIDEI.

Pileus flocculose or somewhat squamulose; absolutely dry, not hygrophanous.

*** NOLANIDEI.

Pileus thin, hygrophanous, somewhat silky when dry; *often* undulate and irregular. Resembling *Nolanea*, except in the stem, and differing in the incurved margin of the pileus.

* GENUINI.

Entoloma sinuatum. Fr.

Pileus up to 6 in. across, very fleshy, convex then expanded, gibbous at first, then depressed, yellowish-white; margin wavy and sinuate, becoming broken up into squamules when dry; gills emarginate, slightly adnexed, ½–⅗ in. broad, crowded, distinct, reddish-yellow; stem solid, firm, stout, 3–6 in. long, 1 in. thick, equal, compact, fibrillose at first, then glabrous, naked, white.

Agaricus (*Entoloma*) *sinuatus*, Fries, Epicr., p. 143; Cke., Illustr., pl. 310.

Agaricus sinuatus, Bull., Champ., t. 590.

In woods.

Smell strong, pleasant, almost resembling burnt sugar. The stem is sometimes shorter, as shown in Bulliard's fig. t. 590. (Fries.)

Some old specimens of this fungus, fully grown, measured 9 to 10 in. across. (Saund. & Sm.)

Entoloma lividum. Bull.

Pileus 3–4 in. across, disc very fleshy, becoming very thin towards the margin, flesh white, compact, convex then plane, dry, glabrous, distinctly longitudinally fibrillose, pale livid tan; stem about 3 in. long, 1 in. or more thick, almost equal, glabrous, apex mealy, shining white, imperfectly hollow; gills almost free, rounded behind, 3 lines broad, pallid then flesh-colour; spores subglobose, coarsely warted, 10–11 μ diameter.

Agaricus lividus, Bulliard, Champ., t. 382; Cke., Illustr., pl. 311.

In woods.

Stem rigid externally, stuffed with a spongy pith, slightly striate, 3 in. long, 1 in. and more thick, disc of the pileus compact, 4 in. and more broad, not wavy. Smell of new meal, which suggests its being edible, but according to Quelet, very poisonous. (Fries.)

Var. **roseus**, Cke. Pileus soon plane, smooth, polished, whitish-ochre, disc rosy, margin whitish, about 4 in. across, flesh thick at the disc, gradually becoming thinner to the

almost membranaceous margin, white, compact; gills very much rounded behind and almost free, crowded, about 3 lines broad, pale yellowish flesh-colour; stem about 2 in. long, rather swollen at the base and very slightly thinner upwards, about ⅜ in. thick at the apex, whitish, striate, apex slightly flocculose or mealy, distinctly hollow.

Agaricus (*Entoloma*) *lividus*, Fr., var. *roseus*, Cke., Hdbk., p. 119; Cke., Illustr., pl. 469.

On logs.

The present variety differs from the typical form in many respects, also in habitat, and may eventually prove to be a distinct species.

Entoloma prunuloides. Fr. (fig. 16, p. 236.)

Pileus 2–3 in. across, fleshy, campanulate then convex, at length flattened, somewhat umbonate, unequal (but not wavy), even, viscid, yellowish or livid, margin at length slightly striate; gills almost free, emarginate, at first slightly adnexed, 3–4 lines broad, crowded, ventricose, white then pale flesh-colour; stem 3–3½ in. long, 3–4 lines thick, equal, even or slightly striate, glabrous, naked, white, flesh fibrous, solid; spores subglobose, coarsely warted, 10 μ diam.

Agaricus (*Entoloma*) *prunuloides*, Fries, Epicr., p. 143; Cke., Hdbk., p. 119; Cke., Illustr., pl. 312.

Among moss and grass, &c.

Smell very strong of new meal. The pileus generally becomes longitudinally cracked.

Smell same as *E. prunulum*. Resembling *E. lividum*, but very distinct, only one-third the size. The pileus varies to white, yellowish, or pale grey. (Fries.)

Entoloma repandum. Bull.

Pileus 1–1¾ in. across, flesh white, thick at the disc, thin elsewhere, conical then expanded, umbonate; usually wavy, margin incurved, often lobed, somewhat silky when dry, pale ochraceous, with darker lines; gills almost free, broadest in front; 1½ line broad, pale salmon-colour; stem 1½–2 in. long, equal, silky, white, solid; spores globose, warted, 8 μ diameter.

Agaricus (*Entoloma*) *repandus*, Cke., Hdbk., p. 120; Cke., Illustr., pl. 313.

Agaricus repandus, Bull., Champ., t. 423, fig. 2.

Among grass.

Pileus 1–2 in. broad, conic, obtuse, at length expanded, very fleshy, the margin incurved and lobed, pale whitish-ochraceous, with a few streaky shades, clothed with a very close, adpressed indistinct silkiness. Gills pale dull-rose, broad in front. Spores round, rose-coloured. Stem 1½ in. high, 3 lines thick, white, beautifully adpresso-sericeous, composed of fibrous cells, distinct from those of the pileus. Odour like that of fresh meal. My specimens agree precisely with Bulliard's plant quoted above (Bull., t. 423, f. 2), except that the colour is not so lively. He says expressly that the seminal powder is "rougeâtre," which can hardly apply to any species of the subgenus *Inocybe*. (Berk.)

Entoloma placenta. Fr. (fig. 17, p. 236.)

Pileus 1–2 in. across, convex then expanded, orbicular, even, glabrous, brown, moist in damp weather; flesh thin, watery, becoming pale; gills emarginate, adnexed, crowded, rather thick, white then pale flesh-colour; stem 2–3 in. long, 2–3 lines thick, solid, entirely fibrous, equal, fibrillosely striate, brown.

Agaricus (*Entoloma*) *placenta*, Fries, Epicr., p. 144; Cke., Hdbk., p. 120; Cke., Illustr., p. 314.

In damp places.

Solitary, smell none, taste becoming acrid. Distinguished by the remarkably flattened, umbonate pileus, usually depressed round the umbo and incurved at the margin. Pileus and stem brown. Stem fibrous, sometimes twisted. Smell none, taste becoming acrid.

Entoloma helodes. Fr.

Pileus 2–3 in. across, flesh thin, fragile, becoming somewhat plane, umbonate, often depressed round the umbo, even when moist, glabrous, but often somewhat variegated with spots, livid-purplish with a smoky tinge; margin spreading, sometimes minutely striate; gills obtusely adnate, or slightly sinuate, 3 lines broad, distinct, rather distant, white then pale flesh-colour; stem 2–3 in. long, 3 lines thick, equal or slightly thickened at the base, pallid becoming greyish, with grey fibrils, fragile, hollow, or rarely stuffed; spores subglobose, coarsely warted, 10 μ diam.

Agaricus (*Entoloma*) *helodes*, Fries, Epicr., p. 144; Cke., Hdbk., p. 120; Cke., Illustr., pls. 339, 373.

In turfy swamps, &c.

Smell of new meal; taste watery. Distinguished by the dark brown pileus, which often shows a purple tinge, and the subglobose, coarsely warted spores.

Entoloma bulbigenum. B. & Br.

Pileus ⅔–1 in. across, campanulate or hemispherical, obtuse, minutely tomentosely scaly, shining white, flesh thin, white; gills slightly adnexed, about 1½ line broad, pinkish salmon-colour; stem 2½–3 in. long, 1½ line thick at the apex, somewhat bulbous at the base, fibrillose, whitish, hollow.

Agaricus (*Entoloma*) *bulbigenum*, Berk. & Broome, Ann. Nat. Hist., No. 1937; Cke., Hdbk., p. 120; Cke., Illustr., pl. 315.

Agaricus sericeus, Persoon, Icon. et Descr., i. t. 6, f. 4.

Ag. (*Entoloma*) *persooniana*, Ph. & Pl., Grev., x. p. 66.

On the ground.

Stem sub-bulbous and solid at the base, hollow above, rather slender, 2½ lines thick, pilose-squamulose; pileus shining, silky, convex, obtusely umbonate, white, then pallid, substance rather fleshy; fragile; gills crowded, 2 lines broad, slightly adnexed, fleshy-red. (Persoon.)

The bulb in our plant is much more decided than in Persoon's figure, having a distinctly abrupt margin, and the pileus is not so fleshy. The larger angular spores are as wide as the basidia, and the hymenium abounds with large cystidia. Spores, including the angles, ·015 mm. (= 15 μ). (Phil. & Plow.)

In Cooke's figures the stem is slightly thickened at the base, and in every example has a small lateral, solid body, resembling a very young specimen attached to the very base of the stem.

Entoloma Batschianum. Fr.

Pileus ⅔–1½ in. across, at first slightly convex, soon umbonate, then depressed, even, glabrous, viscid, dark brown or smoky-black, shining when dry, not hygrophanous, margin distinctly involute at first; flesh coloured like the pileus,

white when dry; gills narrowed behind, but the whole breadth of the gill that reaches the stem is adnate, plane, crowded when young, rather distant at maturity, stem dingy white, greyish, or smoky; stem 2–3 in. long, 2–3 lines thick, hollow, tough, not cartilaginous, entirely fibrous, equal or slightly attenuated at both ends, slightly striate with adpressed fibrils, grey; spores subglobose, irregularly nodulose, 9 μ diam.

Agaricus (Entoloma) Batschianus, Fries, Epicr., p. 104; Cke., Hdbk., p. 120; Cke., Illustr., pl. 326.

Among grass in damp places, &c.

Inodorous. Pileus sooty or blackish-olive, shining when dry, not hygrophanous. (Fries.)

Distinguished by the long stem and the small, dark-coloured discoid pileus.

Entoloma Bloxami. B. & Br.

Pileus 1 in. or more across, campanulate, very obtuse, moist, of a dark, dingy blue or purple, or sometimes slate-coloured tinged with lilac, slightly silky, inclined to be lobed below; flesh very thick in the centre, white, except near the edge, where it partakes of the hue of the pileus; gills moderately broad, pale pink, attenuated behind or slightly adnexed; stem 1½ in. high, ½ in. thick, attenuated upwards, of the same colour as the pileus, solid; spores subglobose with an apiculus, very indistinctly warted, 9–10 μ; cystidia absent.

Agaricus (Entoloma) Bloxami, B. & Br., Ann. Nat. Hist., n. 677; Cke., Hdbk., p. 121; Cke., Illustr., pl. 327.

In pastures.

Pileus 1 in. or more across, campanulate, very obtuse, moist, of a dark, dingy blue or purple, or sometimes slate-coloured tinged with lilac, slightly silky, inclined to be lobed below; flesh very thick in the centre, white, except near the edge, where it partakes of the hue of the pileus. Stem 1½ in. high, ½ in. thick, attenuated upwards, of the same colour as the pileus, solid. Gills moderately broad, pale pink, attenuated behind or slightly adnexed, spores irregular, subglobose, with a very large globose nucleus. (B. & Br.)

Entoloma ardosiacum. Bull.

Pileus 1–2 in. across, flesh rather thin, campanulate then convex and usually more or less umbilicate, even, moist, steel-blue with a tinge of brown, at length greyish; gills slightly adnexed, cut out behind, ventricose, crowded, white or greyish flesh-colour; stem about 3 in. long, 2 lines thick at the apex, thickened towards the base, glabrous, steel-blue, base white, hollow; spores rosy, subglobose, nodulose, 9–10 μ diameter.

Agaricus (Entoloma) ardosiacus, Fries, Monogr., ii. p. 295; Cke., Hdbk., p. 121; Cke., Illustr., pl. 328.

Agaricus ardosiacus, Bull., Champ., t. 348.

In damp meadows, also under pines.

Size very variable; somewhat blackish when young. Resembling in colour some species of *Leptonia*. Known from the remaining blue or grey species by the even, moist pileus and long stem. A doubtful native. Cooke's figures are drawn from French specimens.

Entoloma madidum. Fr.

Pileus 1–2 in. across, rather fleshy, campanulate then convex, even, glabrous, moist and often viscid in rainy weather, shining when dry, not hygrophanous, when young blackish-violet, soot-colour when old, margin thin, inflexed, slightly striate; gills slightly adnexed, almost free, ventricose, watery and soft, greyish-white; stem fleshy-fibrous, hollow, distinctly thickened in a clavate manner below, 2–3 in. long, base 4–5 lines, apex 2–3 lines thick, surface fibrillose, apex naked, violet except the white base.

Agaricus (Entoloma) madidus, Fries, Epicr., p. 143.

Among moss, heaps of leaves, &c.

The very strong pungent smell, resembling *Russula foetens*, along with the dark colour of the pileus and stem, readily stamps this species.

Entoloma liquescens. Cooke.

Pileus 1–2½ in. across, flesh uniformly thin, convex then expanded and almost plane, broadly umbonate, margin very thin, wavy, smooth, even, ochraceous-yellow, disc rufous; gills free, crowded, 1¼ line broad, thin, white then pale dingy lilac; stem 2–3 in. long, 2–3 lines thick, equal, white,

erect, flexible, hollow; spores subglobose, warted, dirty-pink, 7–8 μ diameter; no cystidia.

Agaricus (Entoloma) liquescens, Cke., Hdbk., p. 121; Cke., Illustr., pl. 581.

On the ground under trees.

A very peculiar species, readily distinguished by the dingy lilac gills, and subglobose, warted, rosy spores. The gills deliquesce at maturity like those of *Coprinus*.

Entoloma ameides. B. & Br.

Pileus 1–2 in. across, flesh thin, broadly campanulate, often irregular, disc smooth, with whitish flocculent fibrils, soon becoming glabrous and having a silky lustre, undulating, the margin often splitting, pallid reddish-grey; gills deeply rounded behind and slightly adnexed, distant, rugulose, 2 lines broad, pale salmon-colour; stem about 1½ in. long, 2–3 lines thick, solid, whitish, fibrillosely striate above, downy at the base, apex flocculose, often compressed; spores subglobose, coarsely warted, 10 μ diameter; no cystidia.

Agaricus (Entoloma) ameides, B. & Br., Ann. Nat. Hist., n. 999 (1865); Cke., Hdbk., p. 121; Cke., Illustr., pl. 341.

In pastures.

Pileus 1–2½ in. across, varying from hemispherical in smaller specimens to campanulate, thin, pale reddish-grey; spores rose-coloured, irregular. Large specimens at first sight closely resemble *Hygrophorus ovinus*. Smell peculiar, resembling a mixture of orange-flower water and starch. The whole plant acquires a reddish tint in drying. (Berk.)

** LEPTONIDEI.

Entoloma Saundersii. Fr.

Pileus 2½–3½ in. across, flesh white, thick at the disc and gradually becoming thin towards the margin, campanulate then expanded, the more or less lobed margin often upturned, adpressedly tomentose, white, brownish when old; gills sinuate and slightly adnexed, 3–4 lines broad, distant, salmon-colour; stem 4–5 in. long, ½ in. or more thick, equal or slightly thickened at the base, firm, smooth, white, solid.

Agaricus (*Entoloma*) *Saundersii*, Fries, Hym. Eur., p. 192; Cke., Hdbk., p. 122; Cke., Illustr., pl. 306.

Agaricus majalis, Saund. and Smith, t. 46.

Growing on the ground in patches.

Ag. majalis differs from this, especially in the slender stature, fistulose stem, membranaceous pileus, which is campanulate on opening, and cinnamon, and in the gills being free, crowded, and crenate. (Cooke.)

Entoloma fertilis. Berk.

Pileus 4–6 in. across, flesh white, thick at the disc becoming very thin towards the margin, convex then plane, obtuse, dry, pulverulently scaly, pallid reddish or very pale reddish-ochre, palest at the margin; gills slightly adnexed, rounded behind, rather close, 3–4 lines broad, pale flesh-colour; stem 4–5 in. long, 1 in. and more thick, almost equal, except the somewhat bulbous base, fibrillose and somewhat squamulose, whitish, solid.

Agaricus (*Entoloma*) *fertilis*, Berk., Outl., p. 142; Cke., Illustr., pl. 316.

On the ground in woods.

Smell resembling new meal. The largest of our species of *Entoloma*; distinguished from *E. lividus* by the pileus being broken up into pulverulent squamules.

Subgregarious. Pileus 4½ in. broad, expanded, obtuse, somewhat lobed, pulverulento-squamulose, fleshy, dry, pinkish-buff, with sometimes a tinge of yellow; gills rose-coloured, adnexed, nearly free; sporules rose-coloured; stem 2½–3½ in. high, ¾–1 in. thick, stuffed, firm, fibrillose, subsquamulose, subcompressed, somewhat bulbous at the base, paler than the pileus. Odour like that of fresh meal. (Berk.)

Entoloma jubatum. Fr.

Pileus 1–3 in. across, campanulate then expanded, umbonate, cuticle fibrillose or floccosely-squamulose, mouse-colour, not hygrophanous; flesh thin, similar in colour to the pileus, easily splitting; gills slightly adnexed, somewhat emarginate, readily separating from the stem, crowded, ventricose, at first dark smoke-colour (not greyish-brown) then pretty smoky-purple; stem fleshy, fibrous, rigid, fragile, hollow, 2–3 in. long, 2–4 lines thick, equal, brownish, covered

with smoke-coloured fibrils; spores subelliptical, minutely warted, 10–11 × 6 μ.

Agaricus (Entoloma) jubatus, Fries, Epicr., p. 568; Cke., Hdbk., p. 123.

Among grass and moss.

Gills becoming purplish. Stem rigid, entirely fibrous, not shining.

Entoloma resutum. Fr.

Pileus about 1 in. across, flesh thin, convex, rather obtuse, brownish, never umbilicate, but the disc darker, everywhere densely floccosely-scaly, scales sometimes adpressed and darker in colour, sometimes almost even and longitudinally fibrillose; gills slightly adnexed, very ventricose, about 2 lines broad, rather crowded, thickish, grey, dark-coloured from the first; stem 1½–3 in. long, 1½ line thick, entirely fibrous, equal, externally polished and glabrous, slightly striate, greyish, stuffed then hollow.

Agaricus (Entoloma) resutus, Fries, Epicr., p. 145; Cke., Illustr., pl. 318A?

In woods.

Inodorous. In Cooke's figures the gills are clear pale flesh-colour, whereas Fries distinctly states, "gills grey from the first:" hence Cooke's figures may possibly represent some other species.

Entoloma griseocyaneum. Fr.

Pileus up to 1 in. across, flesh thin, campanulate then convex, obtuse, never depressed, entirely floccosely squamulose, grey or with a lilac tinge, not hygrophanous, gills adnexed, seceding and becoming free, ventricose, white, then flesh-colour; stem 1½ in. long, 2–3 lines thick, externally floccosely fibrillose, pallid becoming bluish, at length entirely white, hollow, not cartilaginous but entirely fibrous.

Agaricus (Entoloma) griseocyaneus, Fries, Epicr., p. 145; Cke., Hdbk., p. 123; Cke., Illustr., pl. 318B.

In sunny pastures, &c.

Often associated with species of *Leptonia*, with which it agrees in colour, but distinguished by being entirely soft, and not cartilaginous. (Fries.)

Entoloma sericellum. Fr.

Pileus ½–1¼ in. across, flesh thin, white, convex then plane, obtuse and at length depressed, often irregular, dry, even, silky, at length almost glabrous, but often squamulose, white or yellowish-white; margin of the pileus at first incurved and floccose; gills at first adnate with a decurrent tooth, then separating and becoming slightly emarginate, very broad, rather distant, white then flesh-colour; stem 1–2 in. long, 1 line thick, equal, fibrillose, white then pallid, at length somewhat polished and glabrous, imperfectly hollow, waxy rather than fibrous; spores subglobose, coarsely warted, 10 μ diam.

Agaricus (Entoloma) sericellus, Fries, Epicr., p. 196; Cke., Illustr., pl. 307.

Among grass.

A very distinct species, known from *E. speculum*, the only other white *Entoloma*, by its smaller size and silky pileus.

Entoloma Cookei. Ch. Rich.

Pileus ⅝–1½ in. across, flesh rather thick at the disc, very thin elsewhere, convex then expanded, margin incurved, pale reddish-orange or brick-red, everywhere covered with paler raised ribs, which combine to form an irregularly polygonal network; gills adnexed, somewhat distant, 1½ line broad, thickish, pale flesh-colour; stem up to 1 in. long, 2 lines thick, sometimes more, often slightly incurved, pale red, solid; flesh, like that of the pileus, more or less tinged rose-colour; spores globose, minutely echinulate, 8 μ; cystidia absent.

Entoloma Cookei, Ch. Rich., Descript. & Dess., p. 559, t. 3, f. 10–11.

Agaricus (pluteus) phlebophorus, Ditm., var. *reticulatus*, Cke., Hdbk., p. 118; Cke., Illustr., pl. 422B.

On stumps.

Pileus salmon-colour, reticulated with elevated anastomosing ribs, forming deep hexagonal pits; margin incurved; stem short, curved. (Cooke.)

Entoloma Thomsoni. B. & Br.

Pileus from 1–2 in. across, flesh mottled, rather thick at the umbo, thin elsewhere, somewhat convex then expanded,

more or less umbonate, grey, reticulated with raised ribs; gills rounded behind and very slightly adnexed, 2 lines broad, rather distant, flesh-colour; stem $1\frac{1}{2}$–2 in. long, 2 lines thick, fibrillose and tomentose, solid, paler than the pileus; spores elliptical, smooth, $6 \times 3 \cdot 5\ \mu$; no cystidia.

Agaricus (Entoloma) Thomsoni, Berk. & Broome, Annals Nat. Hist., no. 1523; Cke., Hdbk., p. 123; Cke., Illustr., pl. 374.

Among grass in a plantation.

Distinguished by the raised ribs on the pileus.

Entoloma tortipes. Mass.

Pileus about 3 in. across, at first convex and broadly umbonate, then expanded and depressed round the umbo, margin arched, flexuous, even, glabrous, when moist dark brown, shining, cinnamon when dry and then silky-shining; flesh about 1 line thick, dark when moist, paler when dry, often splitting at the margin; gills broadly adnate with a minute sinus, seceding and appearing to be free after the expansion of the pileus, thin and soft, crowded, edge entire, $\frac{1}{3}$ in. or more in breadth behind, tapering towards the margin, pale dingy pink, stem 2–$2\frac{1}{2}$ in. long, $\frac{1}{4}$ in. thick or more, flexuous or angularly bent, whitish tinged with cinnamon, corticated, silky-fibrillose, solid; spores elliptical, smooth, $5 \times 3\ \mu$; no cystidia.

Among grass. Solitary. Shining as if oiled when moist. Taste and smell none. Allied to *Entoloma clypeata*, but quite distinct in the small, smooth, elliptical spores. The margin of the gills entire.

*** NOLANIDEI.

Entoloma clypeatum. Linn.

Pileus 2–3 in. across, campanulate then expanded, umbonate, glabrous, fragile, lurid when moist, grey with darker spots or lines when dry; flesh thin, white when dry; gills rounded behind, slightly adnexed, becoming free, 3–4 lines broad, ventricose, rather distant, dingy, then powdered with red from the spores, margin serrulate, especially behind; stem stuffed at length hollow, entirely fibrous, 3–4 in. long,

3–4 lines thick, sometimes more, equal, round, fragile, longitudinally fibrillose, grey, powdery at the apex; spores subglobose, nodulose, 9–10 μ diam.

Agaricus clypeatus, Linn., Suec. no. 1216; Cke., Hdbk., p. 124; Cke., Illustr., pl. 319 (called by mistake *Ent. clypeus*).

On the ground among grass, &c., appearing in the spring.

Large, gregarious, lurid and unattractive when growing, grey and rather shiny when dry, virgate and spotted. (Fries.)

Entoloma nigrocinnamomeum. Kalchbr.

Pileus 2–3 in. across, flesh thin, tough, convex then flattened and depressed round the somewhat prominent umbo, margin rather incurved, sometimes splitting, even, smooth, rather silky and shining, umber-brown, becoming blackish; gills adnexed, rounded behind, soon seceding from the stem, 3–4 lines broad, rather distant, reddish cinnamon; stem about 2½ in. long, 4 lines thick, fibrillose, usually twisted, greyish then tinged reddish, distinctly hollow; spores subglobose, coarsely warted, 8–9 μ diameter.

Agaricus (Entoloma) nigrocinnamomeus, Kalchbr., Icon. Hung., t. xi. f. 1; Cke., Illustr., pl. 1153.

In pastures, &c.

Allied to *Entoloma clypeatum*, but distinguished by the darker colour of the pileus, the distinctly hollow stem, and the entire margin of the gills. Smell of new meal.

Entoloma rhodopolium. Fr.

Pileus 2–5 in. across, flesh thin, when young campanulate then expanded, somewhat umbonate or gibbous, at length almost plane or sometimes depressed, fibrillose when young, glabrous when adult, hygrophanous, when moist, brown (when young), or livid (when old), becoming pale, dingy pale livid-ochre when dry, silky-shining, margin at first incurved and undulate in large specimens; flesh white; gills adnate, seceding, somewhat sinuate, rather distant, 2–4 lines broad, white then rosy; stem hollow, 2–4 in. long, 3–5 lines thick, equal in small specimens, attenuated upwards in large specimens, apex with white meal, rest glabrous, minutely striate, white.

Agaricus (Entoloma) rhodopolius, Fries, Epicr., p. 147; Cke., Illustr., pl. 342.

In woods.

Fragile, usually large, and often showy, almost inodorous.

Pileus 1½–2½ in. broad, plano-expanded or sub-depressed, occasionally minutely umbonate, ochraceous with a brownish tint, the margin sometimes darker and waved, in large specimens subcarnose, smooth and shining with a satiny lustre, most minutely silky under a lens, but the silkiness is quite adpressed. Gills very broad, thick, adnate, more or less rounded behind, and separating from the stem, covered with elongated conical processes, surmounted by three divaricate spiculae. Sporules elliptic, rose-coloured. Stem 2–4 in. high, 2 lines or more thick, hollow, stringy within or occasionally with transverse imperfect partitions, subflexuous, pulverulent at the apex, downy at the base, minutely fibrilloso-striate. Odour strong, sometimes resembling that of nitric acid, sometimes that of *Polyporus squamosus*. (Berk.)

Entoloma majalis. Fr.

Pileus 1½–3 in. across, flesh rather thin, splitting, campanulate then convex, somewhat umbonate, becoming expanded, rather fragile, glabrous, even, more or less cinnamon-colour, yellowish-ochre when dry, margin wavy, easily cracking; gills free, ventricose, crowded, margin crenate, pallid, becoming rosy flesh-colour from the spores; stem 3–4 in. long, 2–3 lines thick, slightly thickened below, twisted, striate, rather fibrillose, whitish, base slightly incrassated, white and downy.

Agaricus (Entoloma) majalis, Fries, Epicr., p. 147; Cke., Hdbk., p. 124.

In fir-woods among moss, &c.

Caespitose, large, slender, stems often connate at the base, hollow. Allied to *Nolanea*. (Fries.)

Pileus cinnamon-ochraceous when dry. Sowerby's plate 174 is considered a variety of this species, which is a doubtful native. (Cke.)

Entoloma Wynnei. B. & Br.

Pileus 1–1¾ in. across, flesh white, very thin except at the disc, somewhat convex soon becoming plane, more or less

umbonate, often wavy, hygrophanous, smoky-grey, velvety then squamulose; gills almost free, 2 lines broad, transversely ribbed, pale salmon-colour, margin crenulate; stem 1½–2 in. long, 2 lines thick, smoky-blue, often compressed, base cottony, white; spores elliptic-oblong, apiculate, coarsely warted, 10–11 × 7–8 μ; no cystidia.

Agaricus (Entoloma) Wynnei, Berk. & Broome, Ann. Nat. Hist., no. 1342; Cke., Hdbk., p. 124; Cke., Illustr., pl. 329.

In fir-woods.

Described as having the odour of bugs. This character, along with the hollow stem, distinguishes the present species from *E. Thomsoni*.

Entoloma costatum. Fr.

Pileus 2–3 in. across, flesh rather thin, greyish, convex, bullate, then almost plane, somewhat umbilicate, wavy, glabrous, hygrophanous, livid-brownish, shining when dry; gills almost free, 2–3 lines broad, with raised veins extending from the base to the entire margin, somewhat undulating, pallid; stem about 2 in. long and 3–4 lines thick, deformed, somewhat striate, grey, apex with white squamules, hollow.

Agaricus (Entoloma) costatus, Fries, Syst. Myc., p. 206; Cke., Illustr., pl. 320A.

In damp meadows, &c.

Often densely caespitose, but not so every year. Fragile, smell none. Somewhat resembling *E. sericeum*, but distinguished by its larger size, entire absence of smell, and the veined gills.

Usually forming large tufts, crowded, very fragile, stem generally deformed, hollow, 2 in. long, 3–4 lines thick, often compressed, slightly striate, grey, apex powdered with white meal. Pileus fleshy, membranaceous, convexo-bullate, undulato-deformed, at length almost plane, more or less umbilicate, 2–3 in. across, glabrous, livid-fuscous, paler when dry, often blackish when old; margin at first incurved; flesh thin, splitting, coloured like the pileus. Gills almost free, very broad, with transverse elevated ribs or veins, undulated, not serrated, pallid then flesh-colour. Allied to *Entoloma sericea*, but inodorous. (Fries.)

Entoloma sericeum. Fr.

Smell strong of meal. Pileus about 1 in. across, flesh

thin, convex, then more or less expanded, often minutely umbilicate, margin incurved, often rather wavy, hygrophanous, brownish when moist; paler, silky, and shining when dry; gills rather distant, broad, emarginate and adnexed, *salmon-colour*: *stem* 1–1½ in. *long*, equal, hollow, fibrous, shining, colour of pileus or paler; spores irregularly globose with a long apiculus, 7–8 μ diam.

Agaricus (*Entoloma*) *sericeus*, Fries, Spic., p. 3; Cke., Illustr., t. 320 (attachment of gills wrong).

Among grass in pastures, &c. Somewhat resembling *Nolanea pascua*, but distinguished by the strong mealy odour and broad distant gills cut out behind.

Gregarious, small, but rather firm, odour strong of new meal, by which the present is distinguished from *Ag. pascuus* and other allied species. Stem thin, splitting into fibres, 1–2 in. long, 1–2 lines thick, equal or thickened upwards, grey, fibrillose. Pileus fleshy, membranaceous, convex then plane, obtuse, rather repand, 1 in. and more broad, even, glabrous, umber, paler when dry, and silky, margin at first involute, striate. Gills broadly emarginate, slightly adnexed, horizontal, equally attenuated from the stem to the margin, not ventricose, grey, then rufescent, sides even. (Fries.)

Entoloma nidorosum. Fr.

Pileus 2–3 in. across, flesh quite thin, convex then expanded, at length often depressed and deformed, cracked, very fragile, everywhere glabrous, but silky-shining when dry, greyish fawn-colour when fresh, livid when dry; gills emarginate, almost free, 3–4 lines broad, at length distant, fragile, pallid then pale flesh-colour, sometimes wavy and undulated; stem 2–3 lines long, 2–3 lines thick, stuffed, almost solid, equal throughout, glabrous, even, whitish-pallid, apex with white meal.

Agaricus (*Entoloma*) *nidorosus*, Fries, Epicr., p. 148; Cke., Hdbk., p. 125; Cke., Illustr., pl. 321.

In woods.

Fragile, smell alkaline, but at times almost inodorous.

With an alkaline smell. Somewhat resembling *E. rhodopolium*, but much more slender, fragile. (Fries.)

Entoloma speculum. Fr.

Pileus 1–2 in. across, convex then expanded and sub-

depressed, quite glabrous, then incurved, flexuous, hygrophanous, pallid when moist, shining white when dry; gills emarginate, about 3 lines broad, distant, ventricose, pale flesh-colour; stem 2–3 in. long, 2 lines thick, equal, striate, very fragile, shining white, hollow; spores subglobose, nodulose, about 12 μ diam.

Agaricus (Hebeloma) speculum, Fries, Spic., p. 4; Cke., Illustr., pl. 308.

Among grass and twigs.

Very fragile, somewhat caespitose, inodorous, readily known by the shining white pileus and stem when dry.

Pileus almost membranaceous, pellucid when moist, at first convex, soon expanded and depressed, but the disc is mostly obtuse or slightly umbonate, even, very glabrous, hygrophanous, watery or pale straw-colour when moist, silvery and polished, but not having a silky appearance when dry, margin thin, incurved, flexuous, pellucidly striate; gills slightly adnexed, broadly emarginate near the stem, 3–4 lines broad, white then flesh-colour, margin entire, with a brown tinge; stem hollow, 2–3 in. long, 2 lines thick, glabrous, round when young, then compressed, shining. (Fries.)

PLUTEUS. Fries. (figs. 4, 5, p. 236.)

Pileus irregular; gills free from the stem, rounded behind, salmon-colour at maturity; stem central, ring and volva entirely absent; spores smooth or warted, pale salmon or flesh-colour.

Pluteus, Fries, Epicr., p. 140; Cke., Hdbk., p. 114.

The species grow on wood. When young, the gills are white, then pale salmon-colour or flesh-colour, in some species with a shade of yellow.

ANALYSIS OF THE SPECIES.

* Cuticle of pileus furnished with fibrils or down that eventually disappears.

** Pileus slightly powdery or atomate.

*** Pileus glabrous, naked.

* *Cuticle of pileus fibrillose or floccose.*

Pluteus cervinus. Schaeff.

Pileus 2–4 in. across, flesh white, thick at the disc, becoming very thin towards the margin, campanulate then expanded, even, at first glabrous, then becoming broken up into fibrillose squamules that soon disappear, smoky with a yellow, brown, or fawn-coloured tinge; gills free, crowded, 2–3 lines broad, white then salmon-colour; stem 2–4 in. long, ¼ in. and more thick, equal, pale with blackish fibrils, solid; spores broadly elliptical, smooth, 7–8 × 5–6; cystidia ventricose, often spinose at the apex.

Agaricus cervinus, Schaeffer, t. 10; Cke., Hdbk., p. 114; Cke., Illustr., pl. 501.

On trunks and stumps.

Solitary. Pileus 2–3 in. broad, carnose, here and there wrinkled, campanulate, at length more or less plane, umber, at length dark-brown; gills free, ventricose, moderately close, at first white, then rose red. The texture consists of long cells, and between the asci which cover their surface under a high power at tolerably regular distances are transparent bodies, longer than the asci, ending in two or three curved spiculae; spores round, rose-coloured; stem 3–4 in. high, firm, thicker at the base, whitish or here and there of the colour of the pileus, but paler, covered with fine black streaks. (Ditm.)

Var. **patricius**, Schulz., in Kalchbr., Icon. Hung., t. 10, f. 2; Cke., Hdbk., p. 115; Cke., Illustr., pl. 565.

Pileus 2–3 in. across, whitish, then smoky-grey or fawn-colour, with umber or cinnamon scales, at length smooth, silky, and shining, and cracked in a radiate manner; gills as in the typical form; stem stout, white, shining; spores elliptical, smooth, 8 × 5–6 μ.

On dead logs, stumps, &c.

Var. **eximius**, Saund. & Smith, Illustr., pl. 38; Cke., Hdbk., p. 115; Cke., Illustr., pl. 302.

Pileus 4–6 in. across, flesh thick, convex then expanded, even, covered with a separable cuticle, umber becoming reddish; gills crowded, free, but very close to the stem, ½ in. and more broad, pale salmon-colour; stem 4 in. long,

$1\frac{1}{2}$ in. thick, nearly equal, sulcate upwards, fibrillose, at length blackish.

On sawdust.

Var. **Bullii**, Berk., MS.; Cke., Hdbk., p. 115; Cke., Illustr., pl. 357.

Pileus 4–6 in. across, flesh thick, convex then expanded, smooth, even, pallid, the disc darker; gills free, rounded behind, rather distant from the stem, crowded, $\frac{1}{2}$ in. broad, pale salmon-colour; stem 3–4 in. long, 1 in. and more thick, slightly swollen at the base, fibrillose, pale brown, darkest at the base, solid.

On rotten wood.

Var. **petasatus**, Fries, Hym. Eur., p. 186; Cke., Hdbk., p. 115; Cke., Illustr., pl. 303.

Pileus 3–4 in. across, flesh rather thick, campanulate then expanded, umbonate, greyish white, very smooth, with a viscid cuticle, at length striate to the middle; gills free, $\frac{1}{2}$ in. and more broad, crowded, becoming dry, white then reddish; stem 4–5 in. long, $\frac{1}{2}$–$\frac{3}{4}$ in. thick, rigid, very slightly and equally attenuated from the base, whitish, fibrillosely striate, solid.

On heaps of straw and dung, sawdust, &c.

Colour verging on bay when old; stem and margin of gills at length with a tawny tinge. (Fries.)

Pluteus umbrosus. Pers.

Pileus $1\frac{1}{2}$–$2\frac{1}{2}$ in. across, flesh thin, campanulate, becoming almost plane, at first villose then with raised ridges that combine and form lacunae, umber-brown, margin fimbriated; gills free, 2 lines broad, flesh-colour, margin darker, fimbriate; stem 2–3 in. long, 2–3 lines thick, about equal, pale, villosely squamulose, solid, usually curved and ascending; spores broadly elliptical, smooth, 6–$7 \times 5\ \mu$; cystidia ventricose, 65–75×18–$20\ \mu$.

Agaricus umbrosus, Pers., Ic. Descr., t. 2, f. 5; Cke., Hdbk., p. 116; Cke., Illustr., pl. 304A.

On trunk of fir and other trees.

Allied to *Pluteus cervinus*, but distinguished by the downy pileus with a fimbriate or ciliate margin, and the darker fimbriate margin of the gills.

Pluteus hispidulus. Fr.

Pileus about ½ in. across, flesh thin, convex then almost plane, pilose or silky, grey, margin becoming slightly striate with age; gills free, rather distant from the stem, 1–1½ line broad, salmon-colour; stem 1–2 in. long, 1 line thick, slightly incrassated at the base, even, glabrous, silvery white, hollow usually incurved and ascending.

Agaricus (Pluteus) hispidulus, Fries, Syst. Myc., i. p. 201; Cke., Hdbk., p. 116; Cke., Illustr., pl. 304B.

On beech trunks, &c.

Distinguished by the small size of its grey, silky pileus. *Fries mentions having found this species on the soil of a plant-pot in a hothouse.*

Pluteus ephebius. Fr.

Pileus 1½–2½ in. across, flesh thin, convex then almost plane, margin often slightly wavy and naked, the remainder covered with a bluish or grey down; gills free, rather distant, 2 lines broad, yellowish salmon-colour; stem 2–3 in. long, 2–3 lines thick, about equal, usually curved and ascending, whitish or tinged grey, glabrous, slightly striate, stuffed; flesh like that of the pileus, white; spores elliptical, smooth, $7 \times 4\ \mu$.

Agaricus (Pluteus) ephebius, Fries. Syst. Myc., i. p. 238; Cke., Hdbk., p. 116; Cke., Illustr., pl. 517.

On trunks, &c.

Fries says the pileus is often brownish-violet. Closely allied to *P. cervinus*, but distinguished by the minutely downy or velvety pileus.

Allied to *Pluteus cervinus*, but smaller, pileus at first villose, at length floccose, bluish; stem also bluish, stuffed, glabrous, or striate from adpressed fibrils; margin of pileus somewhat wavy, but not fimbriate as in *P. umbrosus*; margin of gills coloured like the remainder. (Fries.)

Pluteus salicinus. Pers.

Pileus ⅗–1 in. across, flesh thin, convex then almost plane, rather umbonate, bluish or with a green tinge, disc darker and floccosely rugose; gills free, 1½ line broad, pinkish salmon-colour; stem about 1 in. long, 1½–2 lines thick, often curved and ascending, bluish or greenish, then grey or white, solid.

Agaricus salicinus, Pers., Syn., p. 344; Cke., Hdbk., p. 371; Cke., Illustr., pl. 1169A.

On willow trunks.

Distinguished from *P. ephebius* by the pileus not being downy, rather umbonate, and floccosely rugose at the disc. Fries gives two varieties:—

Var. **beryllus**, Pers., Syn., p. 334; pileus with greenish streaks. On alder.

Var. **floccosa**, Karst.; pileus floccosely squamulose.

Most nearly allied to *Pluteus ephebius*, but two or three times smaller. Stem stuffed, 1–2 in. long, 1 line or a little more thick, equal, fibrillose, fragile, white with a bluish tinge, or sometimes greenish; pileus rather fleshy, convex then plane, somewhat umbonate, 1 in. and more broad, glabrous, but the disc floccosely rugulose, and darker, grey: gills exactly as in *P. ephebius*, but smaller. Approaching the genus *Leptonia* in the dark, rugulose disc. (Fries.)

Pluteus pellitus. Fr. (figs. 4, 5, p. 236.)

Pileus 1–2 in. across, flesh thin, soft, white, convex then plane, somewhat umbonate, regular, silky-fibrous, dry, white; gills free, rounded behind, crowded, 1½ line broad, ventricose, white then flesh-colour, margin slightly toothed; stem about 2 in. long, 2–3 lines thick, slightly thickened at the base, even, glabrous, shining, white, stuffed; spores elliptical, smooth, 10 × 6 μ.

Pluteus pellitus, Fries, Epicr., p. 141; Cke., Illustr., pl. 597.

Among grass at the roots of trees, &c.

Our only *Pluteus* with a pure white, even pileus and stem. Superficially resembling *Entoloma prunuloides*, which differs in the broadly emarginate—not free—gills, and in the strong smell of new meal.

** *Pileus rather mealy or atomate.*

Pluteus nanus. Pers.

Pileus 1–1½ in. across, flesh thin, convex then plane, obtuse, umber or smoky brown, rugulose, minutely flocculose or pruinose; gills free, but rather close to the stem, 1½–2 lines

broad, pale salmon-colour; stem 1–1½ in. long, 2 lines thick, rigid, slightly striate, white, solid; spores subglobose, echinulate, 5–6 μ diameter.

Agaricus nanus, Persoon, Syn., p. 357; Cke., Hdbk., p. 116; Cke., Illustr., pl. 305A.

On stumps, fallen sticks, &c.

Stem solid, 1 in. long, 1–2 lines thick, equal or slightly attenuated from the base, and a little dilated at the very apex, slightly striate, whitish. Flesh of pileus thin but rather tough, not at all campanulate, but convex then expanded and flattened, obtuse, constant in shape, 1 in. broad, dry, umber, or the disc darker, usually with prominent radiating umber-coloured ridges or veins, pileus powdered with brown meal. Stem and gills sometimes yellowish. (Fries.)

Var. **lutescens**, Fr., Hym. Eur., p. 187; Cke., Illustr., pl. 305B; size of typical form, but stem and gills, or former only, yellowish.

Var. **major**, Cke., Illustr., pl. 305C; larger than the typical form, pileus even, greyish.

All the forms are distinguished from *P. cervinus* and its varieties by the subglobose warted spores.

Pluteus spilopus. B. & Br.

Pileus 1–1½ in. across, convex then expanded, subumbonate, often with a depression round the umbo, radiately rugulose, brown or dark fawn-colour; flesh thick at the disc, remainder thin, white; gills free, 2 lines broad, pale salmon-colour; stem 1½–2 in. long, 2–3 lines thick, equal, whitish or faintly tinged with fawn-colour and furnished with scattered black points, solid, incurved; spores subglobose, smooth, 7–8 μ diameter.

Agaricus (pluteus) spilopus, B. & Br., Ann. Nat. Hist., no. 1856; Cke., Illustr., pl. 3.5; Cke., Hdbk., p. 117.

On stumps.

Closely allied to both *Pluteus nanus* and *P. cervinus*; distinguished by the globose smooth spores, and the black spots on the stem.

Pluteus semibulosus. Lasch.

Pileus about ½ in. across, flesh thin, hemispherical, obtuse,

slightly mealy, coarsely striate, white; gills free, narrow, salmon-colour; stem about ¾ in. long, somewhat bulbous, white, rather downy, imperfectly hollow.

Agaricus (Pluteus) semibulbosus, Lasch, in Fries' Epicr., p. 141; Cke., Hdbk., p. 117; Cke., Illustr., pl. 518A.

On wood, branches, &c.

Readily known by the fluted pileus and bulbous stem.

Very small, stem minutely fistulose, scarcely exceeding 1 in. long, ½ line or a little more thick, downy, white, base bulbous. Pileus slightly fleshy, globose then expanded, usually hemispherical, obtuse, ½ in. or a little more broad, atomately soft (in ours scarcely sulcate), white. Gills free, crowded, white then flesh-colour, margin similarly coloured. (Fries.)

*** *Pileus glabrous, naked.*

Pluteus violarius. Mass.

Pileus up to 1 in. across, flesh thickish, grey; hemispherical then nearly plane, even, minutely velvety, watery, dark purple, disc darkest, margin undulate; gills free, crowded, about 1 line broad, whitish then bright flesh-colour, margin serrulate; stem about 1 in. long, about 1½ line thick at the base, and gradually attenuated upwards, pale umber and sprinkled with delicate black fibrils below, whitish upwards, silky, hollow; spores subglobose and apiculate, smooth, 5–6 μ diameter.

Agaricus (Pluteus) violarius, Massee, Grev., xiii. p. 89; Cke., Hdbk., p. 117; Cke., Illustr., pl. 518B.

On stumps, &c.

Gregarious. Distinguished at once by the minutely velvety purple pileus. Smell none, taste pleasant. The paper in which the specimens were dried was stained bright violet.

Pluteus roseoalbus. Fr.

Pileus 2–3 in. across, flesh thickish at the disc, becoming thin towards the margin, tinged red; convex then expanded, even, rosy, margin naked; gills free, rather distant, 2 lines broad, flesh-colour; stem 1½–3 in. long, up to ½ in. thick, equal or attenuated, minutely powdered with white meal,

solid, flesh tinged with red; spores globose, slightly angularly warted, 5–6 μ diameter.

Agaricus (Pluteus) roseoalbus, Fries, in Flor. Dan., t. 1679; Cke., Hdbk., p. 117; Cke., Illustr., pl. 595.

On dead or decaying trunks.

Easily recognised by the rosy flesh-colour of the pileus, but in other respects very closely related to *P. cervinus*. Stem solid, 2–3 in. long, ½ in. thick, slightly thinner upwards or almost equal, usually curved and ascending, white, and covered with white meal. Flesh of pileus thin, convex then expanded, 3 in. broad, obtuse, glabrous, everywhere quite even. Gills white then flesh-colour. (Fries.)

Pluteus leoninus. Schaeff.

Pileus 1½–2½ in. across, flesh thin; campanulate then expanded, glabrous, naked, yellow with a tawny tinge, margin striate; *gills free*, 2 lines broad, rather distant, yellowish-pink; stem 2–3 in. long, 2 lines or more thick, about equal, whitish, *striate*, solid.

Agaricus leoninus, Schaeffer, t. 48; Cke., Hdbk., p. 118; Cke., Illustr., pl. 421, fig. A.

On trunks.

Gregarious or in small clusters. Distinguished by the yellow or tawny pileus with a striate margin.

Tall, erect, fragile, often confounded with a yellowish form of *Pluteus nanus*. (Fries.)

Var. **coccineus**, Cke., Illustr., pl. 421B., pileus crimson-orange or vermilion, base of stem with a few red spots.

The pileus is often subumbonate, both in the typical form and the variety.

Solitary or subgregarious, varying much in size and colour. Pileus 1–3 in. broad, tawny-yellow, shaded with bright orange, or purplish-brown tinged with yellow, umbonate; flesh thick in the centre, margin thin, firm in the orange-coloured specimens, covered with a smooth or wrinkled glutinous epidermis; sometimes pitted round the umbo margin more or less striate. Gills rather broad, rounded behind and in front, flesh coloured, moderately distant perfectly free, the edge at first yellowish, afterwards when drying up orange in the orange variety; I could detect no

pellucid processes. Sporules rose-coloured, elliptic. Stem 2–3 in. high, 2–6 lines thick, downy at the base, sometimes rooting, attenuated upwards, twisted and striate, yellow or ochraceous shaded with orange, solid, or at length perfectly hollow, composed of crisp filaments. (Berk.)

Pluteus chrysophaeus. Schaeff.

Pileus 1–2½ in. across, flesh very thin except at the disc, campanulate then expanded, glabrous, naked, slightly wrinkled, margin striate, cinnamon-colour; gills free, 2–3 lines broad, whitish then pale salmon-colour; stem 2–3 in. long, 2–3 lines thick, whitish, glabrous, equal, more or less hollow.

Agaricus chrysophaeus, Schaeffer, t. 253; Cke., Hdbk., p. 118; Cke., Illustr., pl. 509.

On beech trunks, &c.

Resembling *P. leoninus* in size, but differing in the cinnamon-colour of the pileus, which is often obtusely umbonate.

Pluteus phlebophorus. Ditm.

Pileus 1–2 in. across, flesh thin; convex then expanded, with prominent raised veins, umber, naked, margin not striate; gills free, 2 lines broad, white, then pale salmon-colour; stem 1–1½ in. long, 2 lines thick, incurved, glabrous, whitish, shining, hollow.

Agaricus phlebophorus, Ditm., in Sturm, t. 15; Cke., Hdbk., p. 118; Cke., Illustr., pl. 422A.

On trunks, stumps, &c.

Allied to *P. nanus*, from which it is distinguished by the distinctly hollow stem and naked pileus, i.e. not pruinose.

Pileus 1–2½ in. broad, slightly convex or plane in maturity, thin for the size of the plant, but rather firm, pleasant yellowish-brown; epidermis rugose, the rugae branched like veins. Gills broad, ventricose, free, white, changing to rose-colour from the sporules. Stem 2–4 in. high, 3–4 lines thick, whitish, somewhat twisted, mostly hollow, frequently incurved at the base, which is slightly thickened. (Grev.)

VOLVARIA. Fries. (figs. 9, 10, p. 236.)

When young, the entire fungus is enclosed in a universal volva, which at maturity forms a loose, sheathing volva at the base of the stem; pileus regular; stem central; secondary veil absent, hence there is no trace of a ring on the stem; gills free, pale flesh-colour or pale salmon-colour; spores smooth, salmon-colour.

Volvaria, Fries, Syst. Myc., i. p. 277; Cke., Hdbk., p. 113 (*as a subgenus of Agaricus*).

Distinguished by the presence of a volva, absence of ring, and free gills. Volvaria corresponds in structure to *Amanitopsis* in the Leucosporae, and to *Chitonia* in the Porphyrosporae.

ANALYSIS OF THE SPECIES.

* Pileus dry, silky or fibrillose.

** Pileus more or less viscid, smooth.

* *Pileus dry, silky or fibrillose.*

Volvaria bombycina. Fr.

Pileus 4–8 in. across, flesh rather thin, soft, white, at first globose, even campanulate, at length convex and somewhat umbonate, everywhere silky, often squamulose when old, the disc rarely almost glabrous, everywhere whitish; gills free, very crowded when young and almost coherent, ventricose, broad, becoming pale flesh-colour; stem solid, equally attenuated, 3–6 in. long, ½ in. or more thick at the base, even, glabrous, white, volva soon ruptured, large 2–3 in. across, membranaceous, lax, laciniate, somewhat viscid, persistent: spores elliptical, smooth, $6–7 \times 4\ \mu$; cystidia absent or very rare.

Agaricus (Volvaria) bombycinus, Fries, Epicr., p. 138; Cke., Hdbk., p. 112; Cke., Illustr., pl. 293.

On trunks.

Usually solitary, but sometimes truly caespitose, when young, enclosed in an ovate volva, entirely white. (Fries.)

Sometimes very large, a specimen found on an elm trunk in Kew Gardens having the following dimensions: pileus 14 in. across when expanded; stem 8 in. long by 2 in. thick; *gills 1½ in. broad: weight 2¼ lbs: spores normal size.*

Pileus 2 in. or more broad, at first entirely enclosed in a slimy dark volva, at length protruded, campanulate, dirty-white, silky with yellowish-white narrow silky scales, and marked frequently with a few dark blotches, the remains of the volva; flesh whitish, firm, elastic, margin involute. Gills numerous, close, ventricose, quite free, not reaching to the margin, at first white then rose-coloured with a tinge of yellow, at length deliquescent, tinged with umber. Spores elliptic. Stem 2½ in. high, ½ in. thick in the centre, firm, solid, thickest downwards, the tough volva remaining like a cup at the base. The above description is taken from a young specimen. When at full maturity the white of *the pileus is purer, and the pileus itself is more* expanded. (Berk.)

Volvaria volvacea. Bull. (fig. 9, p. 236.)

Pileus 2–3 in. across, flesh white, thick at the disc, very thin elsewhere, soft, campanulate then expanded, obtuse, greyish-yellow, virgate or streaked with adpressed blackish fibrils; gills free, about 2 lines broad, pale flesh-colour; stem 2–4 in. long, about 4 lines thick, almost equal, white, solid, volva large, loose, whitish; spores smooth, elliptical, 6–8 × 3·5–4 μ; no cystidia.

Agaricus (Volvaria) volvaceus, Cke., Hdbk., p. 113; Cke., Illustr., pl. 294.

Agaricus volvaceus, Bull., Champ., t. 262.

On the ground by roadsides, &c., also in stoves.

Allied to *V. bombycina*, but constantly different in the less ample and less persistent, brownish volva; pileus 3 in. across, rarely more, grey, elegantly virgate with blackish fibrils; flesh-colour of the gills not so pure. (Fries.)

Volvaria Loveiana. Berk.

Pileus 2–3½ in. across, flesh rather thick but becoming very thin towards the margin, globose then convex, obtuse, white, silky; gills free, about 2 lines broad, pinkish salmon-

colour; stem 1½–2 in. long, 3–4 lines thick, attenuated upwards, bulbous, fibrillose, white, solid; volva with a free margin, irregularly lobed, whitish; spores elliptical, smooth, 4–5 × 2·5–3 μ; cystidia absent.

Agaricus (*Volvaria*) *Loveianus*, Berk., Outl., t. 7, fig. 2; Cke., Hdbk., p. 113; Cke., Illustr., pl. 295.

Remarkable in its habitat, being parasitic on *Clitocybe nebularis*.

Parasitic on half-decayed, and, in general, distorted specimens of *A. nebularis*.

Gregarious, subcaespitose. At first it appears like a small smooth white round Bovista from the size of a pea to an inch in diameter; it then becomes oblong, and the top of pileus, which is at that stage flattish, bursts through, forming a round aperture in the volva, which as the plant is fully developed, is broken into three or four regular laciniae, with a somewhat wrinkled surface, and the pileus, from subtruncato-globose, becomes convex or slightly expanded, 2½ in. broad, moderately fleshy and beautifully silky; white with a very slight shade of pink or cinereous; margin involute. Gills broad in front, quite free, leaving a space round the stem, not reaching to the margin, subdeliquescent, gradually assuming a pale pink tinge, under a good lens clothed with fine minute transparent points like the *Coprini*.

Spores minute, elliptic, rose-coloured. Stem 2 in. high, 2–3 lines thick, white closely fibrillose with a little matted tomentum, very juicy, solid, bulbous. Volva pure white, with a little downy prominence within round the base of the stem. Taste like that of *A. campestris*. (Berk.)

Volvaria Taylori. Berk.

Pileus 1½–2½ in. across, flesh at the disc, becoming thin towards the margin; conical and obtuse, then expanded, livid, margin whitish, minutely striately cracked from the apex; gills free, from 1½ up to 4 lines broad, narrowest behind, pale salmon-colour; stem about 2 in. long, nearly equal, smooth, whitish, solid, volva with the free margin lobed, externally brown, small; spores broadly elliptical, smooth, 5 × 3·5–4 μ; cystidia absent.

Agaricus (*Volvaria*) *Taylori*, Berk., Outl., p. 140; Cke., Hdbk., p. 113; Cke., Illustr., pl. 296.

On the ground.

Somewhat resembling *V. volvacea*, but distinguished by the paler pileus, the gills much narrowed behind, and especially by the small brown volva.

Pileus 1¾ in. high and broad, beautifully pencilled and cracked; margin lobed and sinuated; stem 2½ in. high, ¼ in. thick, slightly bulbous at the base. Gills uneven. This beautiful species is described from an excellent drawing by Mr. M. A. Taylor, and is clearly quite different from every other species: the dark volva, campanulate pileus and uneven attenuated gills are marked characters. The habit is rather that of some *Entoloma* than of its more immediate allies. (B. & Br.)

** *Pileus more or less viscid, smooth.*

Volvaria speciosa. Fr.

Pileus 3–5 in. across, flesh white, thickish, soft, campanulate then expanded, obtuse or slightly umbonate, then expanded; smooth, even, viscid, disc grey, or entirely whitish; gills free, 3 lines broad, narrowest behind, crowded, pale salmon-colour; stem 5–8 in. long, up to 1 in. thick at the swollen base, from which it is attenuated upwards, and about ½ in. thick at the apex, white, solid, downy; volva whitish, margin free, irregular, downy; spores elliptical or subglobose, smooth, 14–16 × 8 μ; no cystidia.

Agaricus (Volvaria) speciosus, Fries, Syst. Myc., i. p. 278; Cke., Hdbk., p. 113; Cke., Illustr., pl. 297.

On dung-hills and on the ground.

Distinguished by the whitish viscid pileus, and the downy volva and stem. Disc of pileus sometimes brownish.

Volvaria gloiocephala. D. C.

Pileus 3–5 in. across, convex then almost plane, umbonate, glabrous, glutinous, margin slightly striate, smoky-grey; gills free but rather close to the stem, 4–6 lines broad, slightly ventricose, not evidently narrowed behind, pale salmon-colour; stem 4–6 in. long, ½ in. or more thick at the apex, base thickened, smooth, whitish, becoming brownish, especially below, solid; volva whitish, adnate to the base of the stem,

except a short torn margin; spores elliptical, smooth, 10–12 × 6–7 μ: cystidia large, elliptical, rare.

Agaricus gloiocephalus, Decand., Fl. Fr., vi. p. 52.

Agaricus (Volvaria) gloiocephala, Cke., Hdbk., p. 113; Cke., Illustr., pl. 298.

On the ground.

Distinguished by the smoky, glutinous pileus. The measurement of the spores, as given by Saccardo (19 × 9), is certainly too large, and is probably an uncorrected error.

Volvaria parvula. Fr.

Pileus ½–1 in. across, slightly fleshy, conical then campanulate, at length plane and umbonate, dry, silky, white, umbo generally darker; gills free, crowded, clear pale flesh-colour; stem stuffed with a distinct pith, becoming hollow, 1–1½ in. long, 1–2 lines thick, equal, silky, white, base villous; volva minute but lax, usually regularly 3–4-partite; spores broadly elliptical, smooth, 5 × 3·5 μ; no cystidea.

Agaricus parvulus, Fries, Epicr., p. 139; Cke., Hdbk., p. 114; Cke., Illustr., pl. 300B.

In gardens and greenhouses.

Gregarious; smaller than *V. media*.

Var. **biloba.** Entirely white when young, gills becoming whitish flesh-colour; stem stuffed, never fistulose, 1 in. long, 1 line thick, equal, pubescent, sheathed with a bilobed volva that is externally adpressedly silky. Pileus conical when young, 3–4 lines high, dry, and sometimes floccosely-squamulose.

Volvaria media. Schum.

Pileus 1–2 in. across, flesh thin except at the disc, white; campanulato-convex, then almost plane, umbonate, or obtuse, viscid, white, the disc usually tinged brownish, silky when dry; gills free, about 2 lines broad, slightly ventricose, pale salmon-colour; stem 2–3 in. long, about 2–3 lines thick, equal, glabrous, white, solid; volva sheathing, margin lobed, tinged brownish; spores broadly elliptical, smooth, 5 × 3·5 μ; cystidia absent.

Agaricus medius, Schum., Saell., p. 248.

Agaricus (Volvaria) medius, Cke., Hdbk., p. 114; Cke., Illustr., pl. 299.

In pastures, also in pine and beech woods.

Intermediate in size between *V. speciosa* and *V. parvula*. Differs from the former in the glabrous stem and volva; and from the latter in the solid stem.

Allied to *V. speciosa*, but much smaller and entirely white. Stem scarcely 2 in. long, glabrous. Pileus thin, 1–1½ in. across. Quite distinct from *V. parvula*, with which it is frequently confounded, in the solid, glabrous stem, and the viscid, convexo-plane pileus. Gills pretty rosy flesh-colour. (Fries.)

Varying greatly in size and form, from ½ in. to 2 in. or more broad, subcarnose or submembranaceous, plane, subhemispherical or subcampanulate, subumbonate, silky, slightly viscid, white with a brownish or yellowish tinge in the centre. Gills rather thick, broad, quite free, projecting in the young state beyond the edge of the pileus, often rugged, when old rose-coloured, sub-elliptic. Stem nearly equal or slightly thickened below, 1–2 in. high, 2 lines or more thick, nearly smooth, silky under a lens, solid, juicy, furnished at the base with a volva divided into 3 or more lobes, vaginate and close or slightly spreading, nearly smooth and white, or furnished with small flat brownish scales, sometimes entirely dark brown. (Berk.)

Volvaria temperata. Berk. (fig. 10, p. 236.)

Pileus about ½ in. across, flesh very thin, convex then expanded, umbonate, disc very pale tawny, margin whitish and striate, pulverulent; gills free, nearly 1 line broad, ventricose, pale salmon-colour; stem up to 1 in. long, ½ line thick, whitish, minutely fistulose; volva large in proportion, free, margin lobed, tinged with brown; spores elliptical, smooth, $4 \times 2 \cdot 5\ \mu$; cystidia absent.

Agaricus (*Volvaria*) *temperatus*, Berk. & Broome, Ann. Nat. Hist., no. 1757; Cke., Hdbk., p. 114; Cke., Illustr., pl. 309A.

On soil in greenhouses, &c.

Readily distinguished by its very small size.

LEUCOSPORAE.

Spores typically white, although in some species there is a more or less decided, but very faint tinge of yellow or pink. The commonest spore form is elliptical, and with a smooth epispore, although in the genera *Lactarius*, *Russula*, and *Laccaria*, the spores are subglobose and minutely warted or echinulate. The present section contains more species than all the other sections of the Agaricinae added together, and as would be expected, presents the most complete sequence in the differentiation of the sporophore. *Lenzites*, with its corky pileus and gills, connects with Polyporeae through *Daedalea*. The genera characterized by a tough, leathery pileus that dries up and becomes rigid and persistent, as *Panus*, *Lentinus*, &c., are but scantily represented in Britain, or even in Europe, but on the other hand, are more numerous in the tropics than the fleshy, putrescent genera, which attain their maximum, both in development and numbers, in the north temperate zone.

ANALYSIS OF THE GENERA.

I. SCHIZOPHYLLAE.

Margin of gills longitudinally split or canaliculate.

Schizophyllum.—Margin of gills split, the two portions revolute.

Trogia.—Gills resembling wrinkles or folds, edge groved. (The single British species does not show the groove along the margin of the gills.)

II. HAPLOPHYLLAE.

Margin of gills not longitudinally split nor grooved.

A. Tenaces. Coriaceous, corky, or woody, persistent, rigid when dry; gills more or less decurrent.

Lenzites.—Horizontal, sessile, woody or corky; gills radiating.

Xerotus.—Pileus coriaceous; gills forking, margin thick.

Panus.—Pileus coriaceous; gills dry, decurrent, margin quite entire.

Lentinus.—Pileus coriaceous; gills decurrent, margin serrate or irregularly toothed.

B. MOLLES. More or less fleshy, soon decaying and not reviving. (The species of *Collybia* and *Marasmius* are mostly tough and more or less persistent and reviving, but do not become rigid when dry.)

* *Gills decurrent.*

Cantharellus.—Gills with the margin thick, narrow, forking, rather waxy.

Nyctalis.—Gills rather thick, edge blunt. Parasitic on other fungi, rarely growing among dead leaves.

Hygrophorous.—Margin of gills thin and acute, rather waxy; stem central. Growing on the ground. (Some species in this genus have the gills adnate, or almost free.)

Pleurotus.—Growing on wood. Stem when present, excentric or lateral.

Omphalia.—Gills thin, pliant; stem central, cartilaginous. Pileus more or less depressed.

Clitocybe.—Gills thin, pliant; stem central, fibrous; spores smooth, elliptical.

Laccaria.—Gills thin, pliant, mealy; stem central, fibrous; spores globose, warted.

Lactarius.—Exuding a white or coloured milk-like fluid when broken; spores globose, warted. (In some species the gills are adnate.)

** *Gills adnate or adnexed.*

Russula.—Gills very brittle, trama composed of more or less spherical cells; spores globose, warted.

Mycena.—Pileus thin, campanulate, usually striate, margin at first straight.

Collybia.—Pileus rather fleshy, more or less plane; margin incurved when young.

Marasmius. — Tough, drying up and reviving when moistened; gills often connected by veins.

Tricholoma.—Pileus usually fleshy; gills more or less evidently sinuate and adnexed; stem stout.

Armillaria.—The only genus with a ring on the stem and attached gills. (Ring sometimes rather vague; gills decurrent in some species.)

*** *Gills free from the stem.*

Hiatula.—Pileus exceedingly thin, striate. Ring and volva absent.

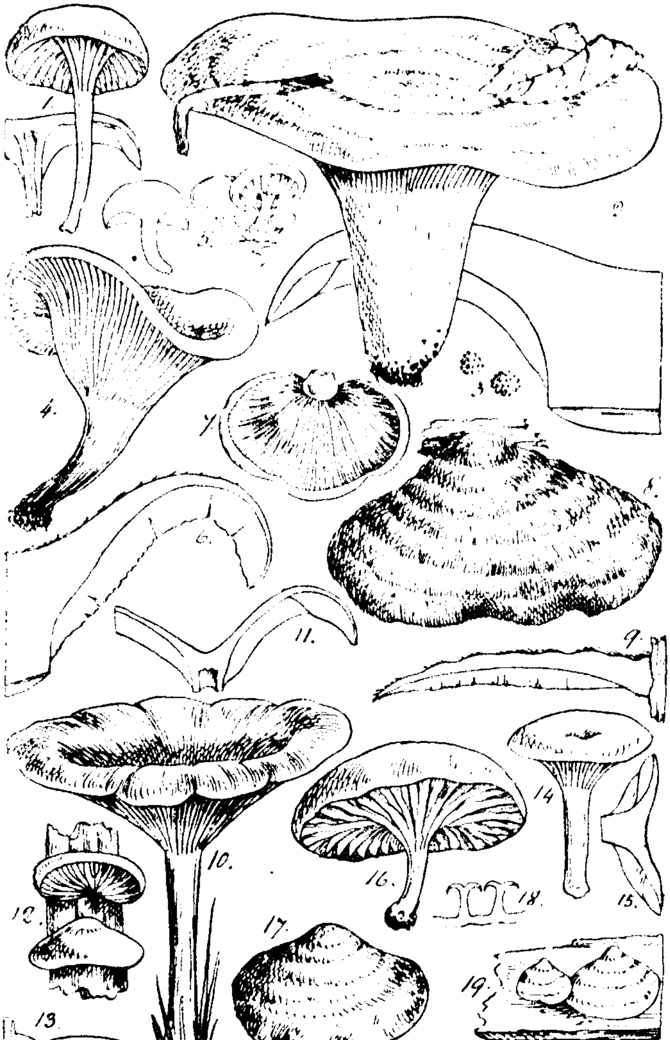
Lepiota.—Ring present; volva absent.

Amanitopsis.—Volva present; ring absent.

Amanita.—Base of stem with a distinct, free volva; ring present on stem. (The volva is sometimes almost, or entirely without a free margin, hence adnate to the stem.)

FIGURES ILLUSTRATING THE *LEUCOSPORAE.*

Fig. 1, *Hygrophorus Wynniae*, and section of same; nat. size;—Fig. 2, *Lactarius blennius*; about one-third nat. size, and section nat. size:—Fig. 3, Spores of same, × 400;—Fig. 4, *Cantharellus aurantiacus*; about two-thirds nat. size;—Fig. 5, *Nyctalis asterophora*, and section; two-thirds nat. size;—Fig 6, *Lentinus tigrinus*; about two-thirds nat. size;—Fig. 7, *Panus stypticus*; nat. size;—Fig. 8, *Lenzites flaccida*; two-thirds nat. size;—Fig. 9, section of same; nat. size;—Fig. 10, *Omphalia*



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SCHIZOPHYLLUM. Fries. (figs. 17, 18, p. 301.)

Pileus with a thin strigose or downy cuticle, dry, flesh absent, lateral, sessile: gills coriaceous, bifid, radiating in a flabellate manner, margin longitudinally split, the split portions curved outwards; spores hyaline or slightly tinged with *colour*.

Schizophyllum, Fries, Obs., i. p. 103; Cke., Hdbk., p. 359.

The species are very dry, sessile, laterally attached, and very variable in form. Known at once by the split margin of the gills. Growing on wood. Rare in temperate regions, but abundant in the tropics.

Schizophyllum commune. Fr. (*figs.* 17, 18, p. 301.)

Pileus ½–1½ in. across, more or less fan-shaped, somewhat narrowed behind to a point of attachment, horizontal, very thin and dry, at first covered with white down, then strigose, entire or more or less deeply lobed at the margin; gills narrow, radiating, grey then pale purplish-brown, margin split; spores subglobose, with a slight purple tinge, 5 × 6 μ.

Schizophyllum commune, Fries, Syst. Myc., i. p. 303; Cke., Hdbk., p. 360; Cke., Illustr., pl. 1114B.

On rotten trunks, &c.

Recognised by the very thin, arid substance, and the split margin of the gills. The only known European species, and local everywhere, but is one of the commonest of fungi in tropical and subtropical regions. Very variable as to mode and extent of marginal indentation.

Pileus very thin, composed of little else than a mass of woolly filaments, sessile, or passing into a very short lateral stipes, nearly plane, more or less circular, subentire or lobed, often growing in an imbricated manner, and rarely exceeding an inch and a half in breadth. The surface is finely

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telmatiaea: small specimen, nat. size;—Fig. 11, section of same; nat. size;—Fig. 12, *Pleurotus gadinoides*: nat. size;—Fig. 13, section of same, × 2;—Fig. 14, *Clitocybe ericetorum*: half nat. size;—Fig. 15, section of same; half nat. size;—Fig. 16, *Xerotus degener*: nat. size;—Fig. 17, *Schizophyllum commune*: nat. size;—Fig. 18, section of gills of same, showing the split margin;—Fig. 19, *Trogia crispa*: small specimen, nat. size.

cottony, and pure white or greyish, marked by a few indistinct zones. Beneath, the lamellae are radiating, subparallel, hairy, coriaceous, and of a reddish-brown or brown-grey colour. Lamellae double; that is, composed of two rather remote plates, united at the back, and with their sides involute, so that in a dry state they appear tubular when transversely divided. They are arranged in distinct fasciculi; each double lamella soon after its origin divides into branches, each of which becomes again subdivided in a fan-like *mode*; *but* all these *divisions* are *within* the *original* lamella. Hymenium in the exterior surface of the lamellae. (Grev.)

TROGIA. Fries. (fig. 19, p. 301.)

Pileus sessile, attached laterally, soft, flaccid, dry, persistent, texture fibrillose; gills fold-like, margin longitudinally channelled; spores colourless.

Trogia, Fries, Epicr., p. 402; Cke., Hdbk., p. 359.

Most closely allied to the genus *Xerotus*, the latter differing in having the thick, obtuse margin of the gills quite entire; but, as a matter of fact, the only British species of *Trogia* has the gills obtuse, and in this feature departs from the generic type, although agreeing in every other essential.

Trogia crispa. Fr. *(fig. 19, p. 301.)*

Pileus ½–1 in. across, tough, when young cup-shaped, then reflexed, lobed and irregular, slightly downy, yellowish-brown behind, margin becoming whitish; gills vein-like, thick, narrow, edge obtuse, crisped, but not canaliculate, greyish-white; spores subglobose, 5–6 μ.

Trogia crispa, Fries, Epicr., p. 369; Cke., Hdbk., p. 359; Cke., Illustr., pl. 114A.

On branches, &c.

Resembling a *Peziza* when young, then irregularly expanded and becoming almost flat, often gregarious. Somewhat the texture and appearance of a small *Merulius*, but distinguished by the colourless spores. Joined by old authors with *Cantharellus*, some of the smaller species of which bear some resemblance to *Trogia*, but the latter differs in not disappearing at maturity, but persistent, and reviving with

moisture, and in growing on wood; the small species of *Cantharellus* decay at maturity, and grow on mosses or leaves.

LENZITES. Fries. (figs. 8, 9, p. 301.)

Pileus corky, coriaceous, horizontal, dimidiate, sessile and *attached behind; gills coriaceous, firm, unequal, simple or* branched, radiating from the point of attachment, sometimes anastomosing and forming irregular pores, margin acute or obtuse; spores white.

Lenzites, Fries, Epicr., p. 403; Cke., Hdbk., p. 360.

Most nearly allied to the genus *Daedalea*, but the hymenium is more of the Agaricoid than the Polyporoid type. In the Polyporeae the hymenium is porous from the first, then frequently, as in *Daedalea quercina* many of the dissepiments become torn, and thus the hymenium presents a labyrinthiform appearance, hence it is towards the margin of the adult pileus that pores are observed, as in *Daedalea*, *Cyclomyces*, &c. In the Agaricinae the hymenium at first consists of radiating gills or lamellae, which afterwards in some species become joined by transverse ribs that form irregular pores most abundant at the base, as in species of *Pleurotus*, *Paxillus*, and many other tough genera. In texture and substance, *Lenzites* agrees with the Polyporeae, in the same way that *Favolus*, belonging to the Polyporeae, agrees with the Agaricinae. (Fries.)

Coriaceous, perennial or persistent; allied to *Daedalea* and *Trametes*. Gills coriaceous, firm, sometimes simple and unequal, at others branches and anatomosing behind to form pores; trama floccose, like the pileus; margin of gills acute in some species, obtuse in others. All the species grow on wood, and in the European forms, dimidiate and sessile. (Fries.)

Lenzites betulina. Fr.

Pileus 3–4 in. long, 1–2 in. broad, more or less reniform or flabellate, horizontal, attached behind by an expanded base, flesh 2–3 lines thick behind, thin towards the margin, corky, coriaceous, firm, pallid, slightly zoned, tinged brownish, becoming pale, margin same colour; gills thin, 1½–2 lines

broad, forked and anastomosing, straight, dingy white: spores elliptical, smooth, 4 × 2 μ.

Lenzites betulina, Fries, Epicr., p. 405; Cke., Hdbk., p. 360; Cke., Illustr., pl. 1145A.

On trunks and stumps, especially birch.

Gills at first thickish, somewhat porous, dingy, then thinner and with the margin acute.

Dimidiate, sessile, corky-coriaceous, firm and rigid, flattened, tomentose, usually indistinctly zoned, the true zones sometimes darker, 1–2 in. broad, becoming pale, greyish-white; flesh floccose, white; gills radiating from the base, straight, simple or branched, often anastomosing, about 3 lines broad, dingy white, margin acute. (Fries.)

Lenzites flaccida. Fr. (figs. 8, 9, p. 301.)

Pileus 1–2½ in. long, 1–1½ in. broad, more or less flabelliform, horizontal, narrowed behind to the point of attachment, coriaceous, flesh about 1 line thick, flaccid, unequal, strigose, zoned, tinged grey or brown, then pale, margin same colour; gills broad, crowded, straight, unequally branched, white then pallid; spores elliptical, smooth, 7 × 5 μ.

Lenzites flaccida, Fries, Epicr., p. 406; Cke., Hdbk., p. 360; Cke., Illustr., pl. 1145B (the gills too narrow).

On trunks and stumps of beech, &c.

Differs from *L. betulina* in the coriaceous thin pileus, scarcely 1 line thick, easily bent, strigosely hairy, at first whitish then sordid, zones similar in colour; gills thick, firm, straight, very broad, simple, or branched, with shorter ones, intermixed, at first shining white then pallid. I have never seen the gills anastomosing in this species, but constantly obfurcate, *i.e.*, forked towards the base. (Fries.)

Lenzites saepiaria. Fr.

Pileus 1–4 in. long, 1–1½ in. broad, horizontal, hard, zoned, strigose or tomentose, wrinkled, bay or sometimes umber, flesh thick, brown, margin yellowish; gills thick, branched and anastomosing, yellowish; spores subglobose, smooth, 5 × 4 μ.

Lenzites saepiaria, Fries, Epicr., p. 407; Cke., Hdbk., p. 366; Cke., Illustr., pl. 1146A.

On fir.

Dimidiate, lateral, corky-coriaceous, hard, convex then flattened, orbicular, or frequently elongated, 1–3 in. broad, zoned, strigosely tomentose, at length squamulose; tawny-yellow when young (and persistent at the margin), bay when adult, becoming blackish when old. Sometimes resupinate, forming orbicular plates. Flesh tawny. Gills spreading from the base, very rigid and firm, branched, more or less anastomosing and resembling *Daedalea*, 1–2 lines broad, yellowish when growing, umber, when old, margin entire or minutely toothed. (Fries.)

Lenzites abietina. Fr.

Pileus 1½–5 in. long, 1 in. or a little more broad, horizontal, thin effuso-reflexed, covered with dark umber down, becoming almost glabrous and hoary; gills decurrent when effused behind, simple, unequal, glaucous from a dense bloom; spores elliptical, smooth, 7–8 × 4 μ.

Lenzites abietina, Fries, Epicr., p. 407; Cke., Hdbk., p. 360; Cke., Illustr., pl. 1146B.

On fir trunks, deals, &c.

Always longitudinally extended, effuso-reflexed, and sometimes resupinate; coriaceous, thin and soft, zoneless, covered with umber-coloured down, then becoming almost glabrous, hoary. I have seen it extending for a foot in length, but narrow, about ½ in. broad. Gills decurrent on the effused base, distant, simple, unequal, not anastomosing, frequently interrupted or torn into teeth, glaucous from the dense bloom. (Fries.)

XEROTUS. Fries. (fig. 16, p. 301.)

Pileus dry, membranaceous, tough; gills coriaceous, resembling broad folds, dichotomous, margin quite entire, obtuse, attached to the central or excentric stem; spores white.

Xerotus, Fries, Epicr., p. 48; Cke., Hdbk., p. 359.

The membranaceous pileus, and coriaceous, dichotomous gills having the obtuse margin quite entire, readily distinguish the present from all other genera. It is almost a coriaceous-membranaceous Cantharellus, but in the last-named genus the gills are much broader. (Fries.)

Xerotus degener. Fr. (fig. 16, p. 301.)

Pileus about 1 in. across, coriaceo-membranaceous, very tough, plano-infundibuliform, entire, greyish-bay and striate when moist, somewhat zoned; gills few, decurrent, distant, simple or dichotomous, greyish-white; stem up to 1 in. long, often much shorter, thin, brown with white velvety-down.

Xerotus degener, Fries, Epicr., p. 400; Cke., Hdbk., p. 359; Cke., Illustr., pl. 1150B. (After Sowerby, pl. 210, called *Agaricus turfosus*.)

In peat mosses, on naked ground, &c.

Most nearly allied to *Thelephora undulata* (= *Stereum undulatum*, Fung. Flor., vol. i. p. 130). The young hymenium has obtuse ribs, and when adult the edges of the gills are acute.

On the ground in sterile, gravelly places. Stem very tough, solid, or floccosely stuffed at the apex, not 1 in. long, often not more than 2–3 lines, 1 line thick, equal, brown with a slight coating of white down. Pileus very thin, coriaceo-membranaceous, very tough, plane becoming infundibuliform, greyish-bay and striate when moist, flocculose and somewhat zoned when dry, grey, but some of the small individuals are zoneless. Gills decurrent, very few and very distant from each other, when only slightly evolved, resembling the ridges in *Cladoderris*, edge very obtuse, when most perfectly evolved, thin, rather broad; greyish-white, margin acute, flaccid, variable, sometimes quite equal, simple, sometimes dichotomous, with shorter ones intermixed. (Fries.)

PANUS. Fries. (fig. 7. p. 301.)

The whole fungus coriaceous and tough, drying up, texture fibrous; pileus irregular, stipitate, sessile and horizontal, or resupinate; gills more or less decurrent, unequal, at length dry and coriaceous, margin quite entire; stem excentric, lateral, or entirely absent; spores smooth.

Panus, Fries, Epicr., p. 396.

Allied to *Lentinus* in the tough, somewhat coriaceous substance, but at once distinguished by the coriaceous gills having the margin quite entire.

Growing on wood, form variable, persistent for a long time. (Fries.)

ANALYSIS OF THE SPECIES.

* Stem excentric.

** Stem distinctly lateral.

*** Stem absent; pileus resupinate

* *Stem excentric.*

Panus conchatus. Fr.

Pileus about 3 in. across, tough and flexible, unequal, excentric or dimidiate, margin often lobed, cinnamon-colour becoming pale, at length more or less scaly; flesh thin; gills narrow, forming decurrent lines on the stem, somewhat branched; pinkish-white then pale-ochraceous, stem about $\frac{3}{4}$ in. long, 3–4 lines thick, solid, unequal, pale, base downy.

Panus conchatus, Fries, Epicr., p. 398; Cke., Hdbk., p. 357; Cke., Illustr., pl. 1149A.

On trunks of beech, poplar, &c.

Often imbricated and more or less grown together. Allied to *Panus torulosus*, but distinguished by the much thinner pileus, more expanded and excentric, also dimidiate, flaccid, cinnamon becoming pale, but the form not constant. Stem about $\frac{1}{2}$ in. long, 4 lines thick, often compressed, downy at the base. Pileus 2–4 in. broad, scaly when old. Gills decurrent in long, parallel lines, not at all resembling those of *Pleurotus ostreatus*, which anastomose behind, but frequently unequally branched, at first whitish or pale flesh-colour, then wood-colour, crisped when dry. (Fries.)

Panus torulosus. Fr.

Pileus 2–3 in. across, coriaceous and flexible, plane, infundibuliform, or dimidiate, margin often much waved, even, somewhat flesh-colour then ochraceous, not scaly; flesh thin; gills decurrent; narrow, rather distant; not anastomosing behind; ruddy then pale buff; stem $\frac{1}{2}$–1 in. long, 3–5 lines thick, solid, oblique, covered with a dense grey down.

Panus torulosus, Fries, Epicr., p. 397; Cke., Hdbk., p. 358; Cke., Illustr., pl. 1149B.

On stumps, trunks, &c.

Common on dead birch trunks. Very variable in shape, at first tough then coriaceous. Stem solid, short (usually 1 in. long), oblique, tough, firm, usually with grey—but sometimes with violet down or tomentum. Pileus entire but very excentric, much more fleshy than in *P. conchatus*; rather compact when young, plane then infundibuliform, 2–3 in. broad, even, glabrous, rather fleshy, varies from livid-rufous to a violet tinge. Flesh pallid. Gills decurrent, rather distant, distinct behind, reddish then pale tan-colour. The indumentum on the stem resembles that of *Paxillus atro-tomentosus*. (Fries.)

** *Stem lateral.*

Panus stypticus. Fr. (fig. 7, p. 301.)

Taste hot and pungent. Thin, flexible, ½–1½ in. across, reniform, cinnamon then yellowish buff, cuticle broken up into mealy granules; gills narrow, rather close, connected by thin transverse ridges, cinnamon; stem lateral, very short, flattened; spores 3 × 1·5–2 μ.

Panus stypticus, Fries, Epicr., p. 399; Cke., Illust., t. 1114A.

On decaying stumps, trunks, &c.

Usually densely imbricated, the short stems being confluent.

Gregarious, caespitose, remarkable for the astringent taste. Stem solid, distinctly lateral, compressed, dilated upwards, not reaching 1 in. in length, ascending, pruinose, paler than the gills. Pileus dry, thin, but not membranaceous, reniform, ½–1 in. broad, pruinose, cinnamon becoming pale, cuticle broken up into minute scurfy squamules. Gills determinate, not decurrent, thin, very narrow, crowded, beautifully connected by veins, cinnamon. (Fries.)

Panus farinaceus. Schum.

Pileus somewhat coriaceous, wavy, cinnamon-umber, the cuticle breaking up into greyish white scurf which eventually

falls away; stem lateral, short, coloured like the pileus: gills determinate, free, distinct, paler.

Panus farinaceus, Schum., p. 365; Fries, Hym. Eur., p. 490.

On trunks.

With the habit of *P. stypticus*. This species has not yet been found in Britain, but the following, which is considered as a variety of the above, has been collected in Epping Forest.

Var. **albido-tomentosus**, Cke. and Mass., Cke., Hdbk., p. 358; Cke., Illustr., pl. 1144B.

Pileus about $\frac{2}{3}$ in. long, $\frac{1}{2}$ in. broad, horizontal, sometimes imbricated, semicircular, subcoriaceous, flexuous or regular, pale umber, densely clothed with a short, whitish, velvety down, which seems to be persistent, but thinner and shorter towards the shortly incurved margin; stem lateral, very short; or entirely absent, and attached by a downy base; gills radiating from the point of attachment; narrowed behind, lanceolate, honey-coloured, margin entire, rigid, scarcely crowded, shorter ones intermixed; spores subglobose, smooth, 5 μ diameter.

On trunks and branches.

Pileus about an inch broad, often in imbricated tufts. It is doubtful whether this is not a distinct species from the type described by Fries. (C. & M.)

*** *Stem absent.*

Panus patellaris. Fr.

Pileus $\frac{1}{4}$–$\frac{2}{3}$ in. across, resupinate, coriaceous, plane then cup-shaped, orbicular, attached by a slightly projecting vertex, scurfy or downy, pallid, margin narrowly incurved; gills radiating from the point of attachment, narrow, dark ochraceous; spores white, smooth, 4×3 μ.

Panus patellaris, Fries, Epicr., p. 400; Cke., Hdbk., p. 538; Cke., Illustr., pl. 1144C.

On branches of cherry, beech, &c.

Simple; allied to *P. stypticus*. Gills as in other species,

quite entire, crowded; but the substance is much firmer, as in *Lentinus.* (Fries.)

In some respects very similar to *P. ringens*, but differs in the distinctly mealy pileus, and the smooth, not striate margin. Pileus ½ in. or a little more. (Cooke.)

Very remarkable. Analogous with *Panus ringens*, but most nearly allied to *P. stypticus*. Pileus resupinate, coriaceous, orbicular, saucer-shaped, sessile, adnate and attached by the vertex, margin free and involute, ½ in. or a little more across, scurfy-downy and pallid externally. From the observations of Lindblad the pileus is viscid at first. Gills meeting at a central point, crowded, quite entire, dry, dark ochraceous. (Fries.)

Panus Stevensonii. B. & Br.

Pileus spathulate, olive-yellow, stem dilated above, convex, golden, slightly hispid; gills narrow, entire; flesh greenish-yellow.

Panus Stevensonii, Berk & Broome, Ann. Nat. Hist., no. 1796; Cke., Hdbk., p. 359.

On oak.

I have not seen a specimen of the above, consequently cannot add to the scanty diagnosis. The species is presumably small in size.

LENTINUS. Fries. (fig. 6, p. 301.)

Pileus *coriaceous*, tough, hard and dry when old, not soon decaying, always more or less irregular; gills becoming dry, tough, simple, unequal, thin, margin acute, toothed or irregular, more or less decurrent; stem when present, hard and firm, central, excentric, or lateral; spores white, smooth.

Lentinus, Fries, Epicr., p. 45; Cke., Hdbk., p. 354.

Allied to *Panus* in the dry, coriaceous nature of the pileus and gills, but distinguished by the toothed or serrate margin of the gills.

All the species grow on wood.

ANALYSIS OF THE SPECIES.

I. Mesopodes.

Pileus more or less entire, stem distinct.

* *Lepidei.* Pileus scaly. Veil more or less evident. (Veil absent in all the following sections.)

** *Pulverulenti.* Pileus downy or pulverulent.

*** *Cochleati.* Pileus glabrous.

II. Pleuroti.

Dimidiate, sessile or with a lateral stem.

I. MESOPODES.

* *Lepidei.*

Lentinus tigrinus. Fr. (fig. 6, p. 301.)

Pileus usually about 2 in. across, fleshy-coriaceous, thin, generally orbicular and central, convexo-plane at first, at length infundibuliform, white variegated with blackish, adpressed, pilose squamules, the margin often split when dry; gills decurrent, not at all sinuate, narrow, crowded, unequal, white, margin toothed; stem solid, very hard, about 2 in. long, usually attenuated downwards, minutely squamulose, whitish, base often ascending and brownish, apex at first furnished with an entire reflexed ring, but this soon disappears; spores elliptical, smooth, $7 \times 3 \cdot 5$ μ.

Lentinus tigrinus, Fries, Epicr., p. 389; Cke., Illustr., pl. 1138 and 1139A; Sowerby, tab. 68.

On dead wood, oak, &c.

Subgregarious or caespitose. Slenderer than *L. lepideus*, and more coriaceous and regular. (Fries.)

Lentinus Dunalii. Fr.

Pileus 1–2 in. across, coriaceous, thin, umbilicate, margin often waved and deformed, pallid, ornamented with adpressed, spot-like scales which eventually fall away, leaving

lls decurrent, crowded, rather narrow.
in. long, somewhat silky, solid, veil

Fries, Epicr., p. 390; Cke., Illustr.,
k., p. 255.

s; ring on the stem very rudimentary.

eus. Fr.
s, fleshy, tough, convex then depressed
ingy ochraceous, becoming broken up
squamules; flesh 2–3 lines thick at
slightly sinuate, decurrent, 2–3 lines
ar, torn, transversely striate, whitish, or
; stem usually about 1 in. long, but
out ½ in. thick, tapering to a rooting
h downy squamules, veil very soon
narrowly elliptical, smooth, 7 × 3 μ.
Fries, Epicr., p. 390; Cke., Illustr.,
onstrous form); Cke., Hdbk., p. 355.
&c.
, much deformed, somewhat excentric,
n white. (Fries.)
ery grotesque forms when growing in

** *Pulverulenti.*

opodius. Schulzer.
ss, fleshy, compact, tough, irregular,
ost lateral, broadly umbilicate, margin
n, more or less lobed, distinctly tomen-
chraceous, rather darker towards the
nes thick at centre of pileus, gradually
wards the margin, very close and com-
eply *decurrent on the under side of the*
-4 lines broad, pale reddish-ochraceous,
minutely toothed, veined at the sides,
stem 3–4 in. long, up to 1 in. thick,
g, solid, hard, tough, somewhat equal,

scurfy or downy, brown, base often blackish; spores cylindrical, obliquely apiculate, smooth, white, 12–15 μ long.

Lentinus leontopodius, Schulzer, in Kalchbr., Icon. Hym. Hung., p. 45, pl. 28; Cke., Hdbk., p. 355.

On willow trunks, &c.

A large and noble fungus, gregarious or caespitose in small clusters. Smell very pleasant. Taste sweet, grateful. (Schulzer.)

Lentinus pulverulentus. Fr.

Pileus about 2 in. across, flesh thin, tough, convex, yellow; stem stout, elongated, equal, rigid, yellow, powdered with white meal; gills denticulate, white.

Lentinus pulverulentus, Fries, Epicr., p. 391; Cke., Hdbk., p. 355; B. & Br., Ann. Nat. Hist., no. 1567.

Agaricus pulverulentus, Scop., Carn., p. 434.

On trunks. Caespitose.

An uncertain species, not seen by Fries. Recorded for Britain by Berkeley and Broome, but judging from their notes, given below, it appears doubtful whether they had the right species in view.

Tufted, at first infundibuliform, then lateral flabelliform, fuliginous, floccoso-pulverulent, with little umber particles; stem elongated, at length smooth; gills pallid, deeply decurrent, their edge crenulate, but not torn; pileus 2 in.; stem 3 in. high. (B. & Br.)

Lentinus resinaceus. Fr.

Pileus 1–2 in. across, rather fleshy, tough, excentric, convex then depressed or infundibuliform, margin involute and variously waved, downy, somewhat glandular and covered with a resinous gum, ochraceous-cinnamon; gills adnato-decurrent, crowded, very narrow at first, fold-like, connected by veins, at length 1–1½ line broad, white, margin serrate; stem solid, firm, scarcely 1 in. long, unequal, expanding into the pileus, even, somewhat downy, pallid.

Lentinus resinaceus, Fries, Epicr., p. 391; Cke., Hdbk., p. 356.

On trunks.

Somewhat caespitose; stems often more or less grown together; fleshy, pliant.

Lentinus adhaerens. A. & S.

Pileus about 1 in. across, flesh thin, tough, irregular, lacunose, somewhat pulverulent, dingy, pale, glutinous; gills forming decurrent lines on the stem, very thin, torn, white; stem rooting, coloured like the pileus, glutinous, somewhat hollow.

Lentinus adhaerens, Fries, Epicr., p. 391; Cke., Hdbk., p. 356.

Agaricus adhaerens, Alb. & Schw., p. 186.

In pine woods.

Small, unequal; taste becoming astringent. Pileus convex and somewhat umbonate, then depressed and infundibuliform. (Fries.)

The pileus and stem appearing as if lacquered, from the gluten.

*** *Cochleati.*

Lentinus cochleatus. Fr.

Pileus 1-2 in. across, tough, flaccid, irregular, more or less lobed and twisted, often depressed or even infundibuliform, reddish-cinnamon; gills somewhat decurrent, crowded, soft, margin distinctly toothed, about 1½ line broad, pinkish-white; stem variable in length and thickness, several frequently more or less grown together, solid, sulcate, smooth, coloured like the pileus or paler.

Lentinus cochleatus, Fries, Hym. Eur., p. 484; Cke., Hdbk., p. 356; Cke., Illustr., pl. 1142A.

On trunks, stumps, &c.

Annual; tufted; with a faint, but very distinct spicy smell.

Tough, flaccid, not perennial, sometimes solitary, at others caespitose, imbricated, and growing into each other; smell weak, resembling aniseed, or none. From a small diminutive form, usually solitary, with pileus and stem scarcely reaching 1 in., extending up to 3 in. Stem solid, firm, sometimes central, often excentric, and sometimes entirely lateral, always sulcate, glabrous, flesh-colour above, reddish-brown below; pileus flexible, thin, 2-3 in. broad, usually excentric, imbricated, very unequal, more or less lobed or contorted, plane, umbilicate, or infundibuliform,

not pervious, glabrous, flesh-colour, becoming pale and somewhat tan-colour. Gills decurrent, crowded, serrate, whitish with a tinge of flesh-colour. (Fries.)

Very much tufted. Several stems are confluent in such a way as to make it doubtful whether the several pilei are really distinct, or are only lobes of one large one, the circle of the gills being always incomplete on the side of the common centre, the whole forming a lobed funnel with deflected edges. The surface is rough, with prominent minute ribs or prickles (as expressed by Sowerby's figure), pale rufescent, often powdered with the white sporules. 1–1½ in. broad.

Sometimes the surface is more even, but still somewhat sculptured so as to be rough with raised lines. Stem compound, strongly ribbed and sulcate, the ribs being continuations of the serrated paler decurrent gills. At first the pileus and gills are tender, stem firm and leathery. Odour agreeable. (Berk.)

II. PLEUROTI.

Lentinus Scoticus. B. & Br.

Pileus 1–2 in. across, flesh thin, soft, very variable, plane, umbilicate, or infundibuliform, smooth, pallid or brownish, hygrophanous; stem excentric or lateral, variable darker than the pileus, pulverulent, springing from a branched, brown mycelium; gills decurrent when the stem is present, rather distant, strongly toothed, pallid; spores elliptical, smooth, 5–6 × 4 μ.

Lentinus Scoticus, Berk. & Broome, Ann. Nat. Hist., no. 1423; Cke., Hdbk., p. 356; Cke., Illustr., pl. 1143.

On furze, birch, &c.

Inodorous, or, at any rate, without any odour of aniseed; extremely variable; pileus ½–1½ in. broad, smooth, hygrophanous, pallid, at length brownish; either quite stemless and reniform, or variously stipitate, solitary or caespitose, sometimes deeply umbilicate, lobed at the margin and sinuate or plicate; stem, when present, varying from 2 lines to as many inches; gills rather distant, strongly toothed, decurrent when the stem is developed. Very rarely two

pilei are joined. The nearest ally to this curious species is *Lentinus omphalodes*. (B. & Br.)

Lentinus fimbriatus. Currey.

Pileus ½–¾ in. across, flesh thin, rather coriaceous, somewhat dimidiate, depressed behind, pale fawn-colour, or whitish, with scattered darker floccose scales; margin slightly incurved and hairy, gills descending but not truly decurrent, narrow, tinged with brown, margin toothed and torn; stem up to ¼ in. long, not 1 line thick, solid, whitish, incurved.

Lentinus fimbriatus, Currey, Linn. Transact., xxiv. p. 152, t. 25, f. 2; Cke., Hdbk., p. 356; Cke., Illustr., pl. 1148A.

On a stump standing in a pond.

Distinguished among British species by its small size.

Lentinus vulpinus. Fr.

Piles 1–2½ in. across, sessile or produced behind into a stem-like base, imbricated, tough, somewhat orbicular or shell-shaped, grown together behind, longitudinally wrinkled and rough with minute floccose points, pale tan-colour; margin incurved, entire; gills 2 lines broad, margin torn, white.

Lentinus vulpinus, Fries, Monogr., ii. p. 238; Cke., Hdbk., p. 357; Cke., Illustr., pl. 1142B.

On trunks and stumps.

Inodorous, and like *Armillaria mellea*, the pilei become powdered with the white spores. (Fries.)

Lentinus flabelliformis. Fr.

Pileus 1–2 in. across, thin, flabby, tough, almost sessile, reniform, plane or somewhat depressed behind, glabrous, even, fawn-colour or pale cinnamon, margin more or less crenulate; gills 2 lines broad, often torn, pallid.

Lentinus flabelliformis, Fries, Epicr., p. 395; Cke., Hdbk., p. 357; Cke., Illustr., pl. 1148B (after Bolton).

On trunks and stumps.

Clustered or imbricated. Fries mentions a small var. *herbarum*, with a membranaceous pileus that becomes pale; growing on stems of *Epilobium*.

CANTHARELLUS. Adans. (fig. 4, p. 391.)

Pileus fleshy or membranaceous, regular, excentric, or variously lobed; gills more or less decurrent, thick, margin blunt, rather waxy, narrow; stem central, lateral, or absent; veil absent; spores white, smooth.

Cantharellus, Adans., Fung. Ord. v.; Cke., Hdbk., p. 339.

The characters of this genus mainly depend on the gills, which are fold-like, more or less thick, decurrent, branched, usually repeatedly dichotomous, and straight, rarely anastomosing. Veil absent. Spores white. The species are fleshy or membranaceous, soon decaying, central stemmed, and terrestrial, or some of the smaller species grow on living mosses, rarely on wood.

Many of the species bear a very close resemblance to species of *Craterellus*, but are distinguished by the evident gills. In *Hygrophorus* the gills are often thick and waxy, but the edge is always sharp and thin.

ANALYSIS OF THE SPECIES.

I. Mesopus.

Pileus entire. Stem central.

* Pileus and solid stem fleshy.

** Pileus somewhat membranaceous; stem tubular, polished.

II. Pleuropus.

Dimidiate; stem exactly lateral.

III. Resupinati.

Pileus sessile, cup-shaped at first, attached by the vertex, then more or less reflexed; wavy.

Growing on moss.

I. MESOPUS.

* *Pileus and solid stem fleshy.*

Cantharellus cibarius. Fr.

Every part opaque yellow-buff; pileus 1½–2½ in. across; flesh thick, firm, whitish; irregular and wavy, at length turbinate, glabrous or very minutely downy; gills decurrent, narrow, thick, distant; stem 1–2 in. long, stout, becoming thicker upwards and gradually expanding into the flesh of the pileus, solid; spores elliptical, smooth, 9 × 5–6 μ.

Cantharellus cibarius, Fries, Syst. Myc., i. p. 318; Cke., Hdbk., p. 339; Cke., Illustr., pl. 1103.

Agaricus cantharellus, Linn., Suec., no. 1207.

In woods.

Esculent. Smell none when fresh, but resembling apricots after having been kept for some time. Fries says that the fungus is sometimes entirely white.

Subgregarious. Pileus 1–4 in. broad, fleshy, firm, variously lobed, depressed, the margin vaulted, smooth, shining, of a rich yolk-of-egg yellow, paler when dry; flesh white or yellowish; folds much sinuated, but evidently forked, thick fleshy, decurrent. Spores elliptic. Stem 1–2 in. high, ⅓–½ in. thick, attenuated downwards, smooth, tough, yellow, diffused into the pileus. Smell very agreeable, like that of dried apricots, taste agreeable, but pungent. Much firmer than *C. aurantiacus*. (Berk.)

Entire plant of a full buffish-yellow, or yolk-of-egg colour, of a rather firm yet brittle substance. Pileus 1–4 in. in breadth, glabrous, irregular, subrepand, frequently variously lobed, the margin rounded, the centre mostly depressed, sometimes much hollowed. Flesh yellowish white or pale yellowish. Lamellae in the form of tumid veins or folds, branching dichotomously, and sometimes anastomosing. Stipes firm, solid, 1–2 in. long, variable in diameter, attenuated downwards. Odour none when quite fresh, but soon after having been gathered, that of ripe apricots. (Grev.).

Every part egg-yellow, pileus truly fleshy, convex at first, then plane and subdepressed, wavy, always glabrous; stem

solid, thickened upwards and passing gradually into the turbinate pileus, a character that separates this species from all others. Gills very decurrent, more tumid than in other species, distant, branched, narrow, resembling folds. Smell none. Taste pleasant. (Fries.)

var. **rufipes.** Gillet, Hym. France, ser. 13; Cke., Hdbk., p. 339; Cke., Illustr., pl. 1131A.

Flesh pale ochraceous; stem rufous at the base.

Cantharellus Friesii. Quel.

Pileus ¾–1½ in. across, flesh rather thin, white, convex then more or less depressed, downy, pale opaque buffish orange; gills decurrent, thickish, narrow, branched, coloured like the pileus or paler; stem about ¾ in. long, 3 lines thick, solid, downy, expanding upwards into the pileus, paler than the pileus, base whitish.

Cantharellus Friesii, Quelet, Fung. Jura et Vosg., t. 23, f. 2; Cke., Hdbk., p. 339; Cke., Illustr., pl. 1131B.

In woods.

Intermediate between *Cantharellus cibarius* and *C. aurantiacus*, with the gills of the former, and the habit of the latter. (Cooke.)

Cantharellus aurantiacus. Fr. (fig. 4, p 301.)

Pileus 1–2 in. across, flesh rather thin, depressed and more or less irregular and wavy, soft, rather tomentose, dingy opaque orange, sometimes paler; gills decurrent, crowded, rather thin, striate at the sides, forked, brighter-coloured than the pileus; stem ½–¾ in. long, about 3 lines thick, slightly thickened upwards and expanding into the pileus, coloured like the pileus, base often darker, stuffed or imperfectly hollow; spores elliptical, smooth, 10 × 5 μ.

Cantharellus aurantiacus, Fries, Syst. Myc., i. p. 318; Cke., Hdbk., p. 339; Cke., Illustr., pl. 1104.

Heaths, fir woods, &c.

Gills sometimes paler than the pileus, nearly white. (Cooke.)

Gregarious. Pileus 1½–2 in. broad, often irregular, slightly depressed, tomentose, though sometimes quite smooth, as in Scotch specimens gathered by Klotzsch, of a beautiful orange; margin paler and involute; sometimes there are

slight traces of an umbo. Folds bright orange, narrow, straight, repeatedly dichotomous. Spores elliptic. Stem 1 in. high, ¼–⅓ in. thick, often excentric and curved, attenuated below, subequal, or incrassated at the base, in general of the same colour as the pileus; often black at the base when old; much smoother than the pileus.

B. On the roots of grass. Pileus 1½ in. broad; depressed and sometimes umbonate, nearly white, or shaded with rich yellow-brown. Folds white or brownish cream-colour. Spores elliptic. Stem 1–1½ in. high, ¼–⅓ in. thick, of the same colour as the pileus. Smell strong. (Berk.)

Cantharellus Brownii. B. & Br.

Ochraceous-white or cream-colour. Pileus about ½ in. across, flesh thin, orbicular, obtuse or slightly umbonate, slightly silky; gills subdecurrent, very narrow, rather distant, simple or forked; stem 1½–2 in. long, not 1 line thick, tough, stuffed; spores broadly elliptical, smooth, $7 \times 5\ \mu$.

Cantharellus Brownii, B. & Br., Berk., Outl., p. 216; Cke., Hdbk., p. 340; Cke., Illustr., pl. 1106A.

Among grass.

Differs from the typical *Cantharellus* type in the almost simple, very narrow, not decurrent gills, and the specimen sent to me suggested *Arrhenia*. (Fries.)

Whole plant of a pale ochraceous cream-colour. Pileus orbicular, thin, convex, subumbonate, ½ in. across, sometimes rather larger, obscurely silky. Stem slender, 1½–2 in. high, scarce 1 line thick, nearly equal, subfurfuraceous, furnished with a little white fibrillose mycelium at the base, which sometimes forms a small earthy ball, rather tough, stuffed. Folds linear, very narrow, sometimes slightly forked, obtusely decurrent; interstices smooth, occasionally quite obsolete except towards the margin. Hymenium nearly white. There is no described species allied to this, except *Cant. aurantiacus*, which approaches to it by means of its white variety. It is a very neat and beautiful fungus, with very much the habit of *Ag. hemisphaericus* (= *Naucoria sideroides*), and with the stem stuffed as in that species. (B. & Br.)

Cantharellus carbonarius. Fr.

Pileus $1\frac{1}{2}$–$2\frac{1}{2}$ in. across, flesh thin, flexible, usually irregular, umbilicate or deeply depressed, minutely squamulose, bay then blackish; gills decurrent, straight, narrow, white; stem 1–3 in. long, 2–3 lines thick, more or less rooting, not unfrequently branched and bearing 2–3 pilei, white or greyish, stuffed; spores elliptical, smooth, 14–15 × 7–8 μ.

Cantharellus carbonarius, Fries, Hym. Eur., p. 456; Cke., Hdbk., p. 340; Cke., Illustr., pl. 1105.

Cantharellus radicosus, B. & Br., Ann. Nat. Hist., 1134 (1860).

Cantharellus anthracophilus, Léveille, Ann. Sci. Nat. 1841, p. 236, t. 14, f. 2.

Merulius carbonarius, Alb. & Schw., p. 375.

On charcoal or on the ground where charcoal has been burnt.

A variable species, but recognised by the depressed, blackish pileus and rooting stem, which is sometimes branched.

Pileus $\frac{3}{4}$–1 in. across, deeply umbilicate, dark brown or black, rough with radiating flocci; stem rooting, deeply pallid; gills narrow, white. Two or three pilei often grow from the same obconical root, which is white and spongy. This agrees in some respects with *C. carbonarius*, Alb. & Schw., which is said to be a variety of *C. umbonatus*, and must be therefore very different from the present species. (B. & Br.).

Cantharellus umbonatus. Fr.

Pileus up to 1 in. across, fleshy, expanded, umbonate then depressed, slightly flocculose, grey then blackish; gills decurrent, narrow, straight, crowded, shining white; stem 2–3 in. long, about 2 lines thick, almost equal, elastic, stuffed, paler grey than the pileus, base downy; spores elliptical, smooth, 10 × 4–5 μ.

Cantharellus umbonatus, Fries, Syst. Myc., i. p. 317; Cke., Hdbk., p. 340; Cke., Illustr., pl. 1106B.

Among moss, &c.

Resembling an Agaric in habit. Allied to *C. carbonarius*, but distinguished by the regular pileus and the regular,

equal stem, which is not rooting. The habitat is also different. Fries says that the present species often becomes reddish when bruised.

Cantharellus albidus. Fr.

Pileus ½–1½ in. across, flesh rather thin, somewhat infundibuliform, irregular, rather wavy, indistinctly zoned, whitish or with a yellow tinge; gills decurrent, thin, rather crowded, repeatedly dichotomous, white; stem 1–1½ in. long, 2 lines thick, equal or becoming compressed, glabrous, white, or rarely tinged with yellow, solid; spores elliptical, smooth, $8 \times 4\ \mu$.

Cantharellus albidus, Fries, Epicr., p. 365; Cke., Illustr., pl. 1107A; Cke., Hdbk., p. 340.

In meadows, among moss, &c.

Tough, but not coriaceous, white, verging on yellow or rufous, pileus somewhat zoned. (Fries.)

** *Pileus submembranaceous; stem hollow, polished.*

Cantharellus tubaeformis. Fr.

Pileus 1–2 in. across, flesh thin, flexible, infundibuliform, waved and more or less lobed, flocculose, yellowish-brown becoming pale; gills slightly decurrent, thick, distant, repeatedly branched, smoky-yellow; stem 2–3 in. long, 3 lines thick, almost equal, often compressed, lacunose, glabrous, dull tawny-orange, hollow; spores elliptical, smooth, $9 \times 6\text{–}7\ \mu$.

Cantharellus tubaeformis, Fries, Syst. Myc., i. p. 319; Cke., Hdbk., p. 340; Cke., Illustr., pl. 1108.

In woods, on the ground and on rotten wood.

Gregarious. Pileus 2 in. broad, thin, at first convex, at length much undulated, depressed and very much umbilicate, occasionally pervious, scrobiculato-squamose, brownish-yellow. Folds straight-forked, slightly anastomosing, cinereous yellow, frosted with a white bloom. Stem 2 in. high, ⅓ in. thick, hollow, compressed, thickest downwards, smooth, slightly downy at the base, saffron-coloured, brownish-yellow above. (Berk.)

Closely allied to *C. infundibuliformis*, with which it was once united, but the typical form appears to be clearly

distinct although intermediate forms exist. Far removed from *C. cibarius*, *C. aurantiacus*, *C. umbonatus*, and *C. albidus*, in the submembranaceous, infundibuliform, flocculose pileus and tubular stem. From *C. infundibuliformis* the present differs in the deeply umbilicate, broader, usually waved and lobed pileus, fuscous when moist, becoming pale when dry, stem hollow, at length compressed and lacunose, tawny-orange, gills more divided, yellow or smoky-grey, and, according to Secretan, never pruinose. Analogous with *Craterellus lutescens* in habit and colour.

Subsp. **lutescens,** Fries, Monogr., ii. p. 208.

Stem equal or attenuated upwards; pileus convex, umbilicate, regular, almost even; gills dichotomous, coloured as in the typical form.

Intermediate between the present species and *C. infundibuliformis*.

Cantharellus infundibuliformis. Fr.

Pileus 1–2½ in. across, submembranaceous, umbilicate then infundibuliform, usually perforated at the base and opening into the cavity of the stem, floccosely rugose on the surface, yellowish-grey or smoky when moist, pale when dry, at length undulated; gills decurrent, thick, distant, dichotomous, straight, yellow, or grey, especially when old, and then pruinose; stem 2–3 in. long, about 2 lines thick, hollow, slightly thickened at the base, even, glabrous, always yellow; spores elliptical, smooth, 9–10 × 6 μ.

Cantharellus infundibuliformis, Fries, Epicr., p. 366; Cke., Illustr., pl. 1109; Cke., Hdbk., p. 341.

On the ground and on rotten wood.

Gregarious, somewhat caespitose. For distinctions between the present species and *C. tubaeformis*, see under the latter.

Cantharellus cinereus. Fr.

Pileus 1–2 in. across, flesh thin, flexible, infundibuliform, pierced at the base and continuous with the hollow of the stem, ornamented with downy squamules, smoky-brown then blackish; gills decurrent, narrow, thick, distant, grey; stem 1½–2 in. long, gradually widening upwards, paler than the pileus, hollow; spores broadly elliptical or sometimes subglobose, about 7 × 5 μ.

Cantharellus cinereus, Fries, Syst. Myc., i. p. 320; Cke., Hdbk., p. 341; Cke., Illustr., pl. 1110A.

In woods.

Closely resembling *Craterellus cornucopioides*, but distinguished by the distinct gills.

Cantharellus Houghtoni. Phil.

Pileus ½–1½ in. across, flesh thin, convex, umbilicate, margin often wavy and upturned, smooth, pallid-white; gills very slightly decurrent, narrow, with a pale pink tinge; stem 1½–2 in. long, equal, slightly expanding into the pileus, whitish, at first delicately fibrillose, stuffed; spores elliptical, 7 × 4 μ.

Cantharellus Houghtoni, Phillips, in Cke.'s Hdbk., p. 341; Cke., Illustr., pl. 1107B.

On the ground.

Pileus 1 in. or more across, dirty-white, with a tinge of flesh-colour; stem 2 in. high, 1 line thick, stuffed, rooting at the base, which is more or less cottony; gills scarcely forked, narrow, slightly decurrent. (Cke.)

Altogether thin and slender, and calling to mind a white, slender *Clitocybe*.

Cantharellus leucophaeus. Mouel.

Pileus about 1 in. across, flesh very thin, pliant, infundibuliform, glabrous, dusky-brown, margin usually incurved; gills decurrent, distant, simple or forked, with intermediate shorter ones, narrow, white; stem about 1 in. long, 1½–2 lines thick, slightly thickened at the base, otherwise equal, stuffed, smooth, paler than the pileus or similar in colour; spores elliptical, smooth, 9 × 5 μ.

Cantharellus leucophaeus, Mouel., Mem. Soc. Lille, 1831, t. i. f. 2–3; Cke., Hdbk., p. 341; Cke., Illustr., pl. 1111A.

A very neat, regular species, somewhat resembling *C. cinereus* in colour and habit, but smaller, pileus not pervious at the base, and stem stuffed.

Cantharellus cupulatus. Fr.

Pileus about ½ in. across, flesh thin, plane then depressed or infundibuliform, often wavy, hygrophanous, pallid-brown or rufescent and with the margin striate when moist, floccu-

lose and without striae when dry; gills decurrent, very distant, rather broad, branched and with intermediate shorter ones, grey; stem about 1 in. long, about ½ line thick, equal, slightly expanding into the pileus, polished, glabrous, stuffed, coloured like the pileus; spores elliptical, smooth, 7 × 5 μ.

Cantharellus cupulatus, Fries, Epicr., p. 367; Cke., Hdbk., p. 342; Cke., Illustr., pl. 1110B.

On the ground.

Easily recognised by its diminutive size, rufescent pileus and stem, and grey gills. Resembling a *Xerotus* in habit.

See note under *C. Stevensoni*.

Cantharellus Stevensoni. B. & Br.

Pileus up to 4 lines across, orbicular, umbilicate, pallid, smooth, margin inflexed, flesh thin; gills decurrent, pallid, brownish behind; stem up to ½ in. high, not ½ line thick, cylindrical, delicately pulverulent, white, then darker.

Cantharellus Stevensoni, Berk. & Br., Ann. Nat. Hist., no. 1422; Cke., Illustr., pl. 1111B; Cke., Hdbk., p. 342.

On rotten wood among moss.

Pileus about 2 lines across, stem ¼ in. high, ½ line thick, with a little white mycelium at the base. Very near to *C. cupulatus*, but that is very strongly umbonate when young, and the umbo is always visible at the bottom of the umbilicus; the habitat moreover is different. (B. & Br.)

Cooke's figures are larger than the measurements given above; pileus up to ½ in. across, with a decided nipple-like umbo; stem up to 1 in. long.

Cantharellus replexus. Fr.

Pileus ½–1 in. across, membranaceous, campanulate then expanded and reflexed, striate, brownish then grey; gills very slightly decurrent, distant, connected by veins to form a reticulation, distant, with shorter branched ones between, white then glaucous; stem 1½–2 in. long, 1 line thick, glabrous, slightly thickened upwards, hollow.

Cantharellus replexus, Fries, Syst. Myc., i. p. 158.

Cantharellus reflexus, Cke., Hdbk., p. 342.

On the ground.

With the habit of *Mycena*, but the gills are broad behind,

thick, and fold-like, margin obtuse and paler. Pileus glabrous or cracked into squamules. (Fries.)

Var. **devexus**, Fries, Syst. Myc., i. p. 158; Cke., Illustr., pl. 1150A.

Differs from the type in the bent down margin of the pileus, stuffed stem, and unbranched grey gills; spores $6 \times 4\ \mu$.

On scorched ground.

Cooke's figures show the pileus upturned at the margin.

II. PLEUROPUS.

Cantharellus muscigenus. Fr.

Pileus $\frac{1}{4}$–$\frac{1}{2}$ in. across, somewhat membranaceous, flaccid, more or less spathulate, often depressed behind, horizontal, smooth, usually zoned, yellowish-brown or fuscous, then greyish-white when old and dry; gills radiating, distant, branched, thick, narrow, coloured like the pileus; stem 1–2 lines long, slender, lateral, downy at the base.

Cantharellus muscigenus, Fries, Syst. Myc., i. p. 323; Cke., Hdbk., p. 342; Cke., Illustr., pl. 1115A.

On the larger mosses, *Hypnum*, &c.

Distinguished from *C. glaucus* by its habitat, and brownish colour when moist.

Agreeing with *C. retirugus* in growing on mosses, but known by the true lateral stem and thick gills.

Cantharellus glaucus. Batsch.

Entirely grey; pileus up to $\frac{1}{2}$ in. across, membranaceous, strap-shaped or flabellate, ascending, silky, not zoned; gills radiating from the point of attachment of the stem, distant, narrow, thick, forked; stem lateral, expanding into the pileus, about 1 line long, slightly pruinose; spores elliptical, smooth, $5 \times 3\ \mu$.

Cantharellus glaucus, Cke., Illustr., pl. 1115B; Cke., Hdbk., p. 343.

On the ground.

Distinguished from *C. muscigenus*, the only other British species with a lateral stem, by growing on the ground, and by being altogether grey in colour.

III. RESUPINATI.

Cantharellus retirugus. Fr.

Pileus ¼–¾ in. across, membranaceous, expanded, more or less fan-shaped or irregular, margin wavy and lobed, greyish-white; subsessile or rarely produced behind into a short, flattened, stem-like base, attached by fibrils; gills radiating from the centre, very thin, anastomosing; spores broadly elliptical, smooth, 10 × 8 μ.

Cantharellus retirugus, Fries, Epicr., p. 368; Cke., Hdbk., p. 343; Cke., Illustr., pl. 1112A.

On mosses, *Hypnum*, &c.

Agreeing with *C. muscigenus* in growing on mosses, but differing in the absence of a true slender stem, and in the very delicate, anastomosing gills.

Cantharellus lobatus. Fr.

Pileus ½–1 in. across, membranaceous, horizontal, more or less orbicular, but with the margin deeply lobed, sessile, brownish, pale when dry; gills radiating from a point, thick and fold-like, branched, distinct.

Cantharellus lobatus, Fries, Syst. Myc., i. p. 323; Cke., Hdbk., p. 343; Cke., Illustr., pl. 1112B.

On mosses in swampy places.

Distinguished by being completely sessile, and the margin of the pileus deeply incised.

In swampy places on *Hypnum*, *sphagnum*, &c., in the spring. Sessile, horizontal, membranaceous, somewhat circular. hardly 1 in. broad, adfixed at first, entire, then sublateral and lobed, dark brown when growing, much paler when dry. Gills fold-like, rather distant, distinct, branched, coloured like the pileus. (Fries.)

Wet boggy places, on moss, as *Hypnum cuspidatum* and *revolens*. April—autumn. Pileus 2 lines, 1½ in. broad, membranaceous, horizontal, often at length vertical, attached laterally by a few byssoid fibres, which sometimes run down the moss for some distance, pale cinereous-umber, margin nearly white, under a lens most minutely scabrous, as if it were innato-fibrillose, occasionally there are two or three zones. *Hymenium* paler, consisting of radiating more or less

anastomosing wrinkles, which, especially at the base, are reticulate, though towards the margin they continue distinct. At first sight it appears like a pale minute specimen of *Peltidea canina*, much sodden with moisture. (Berk.)

NYCTALIS. Fries. (fig. 5, p. 301.)

Pileus symmetrical, in some species bearing large conidia on its surface; gills adnate or decurrent, thick, soft, margin obtuse; stem central, its substance continuous with the flesh of the pileus; spores colourless, smooth, elliptical or subglobose.

Nyctalis, Fries, Syst. Orb. Veg., p. 203; Cke., Hdbk., p. 343.

The typical species are saprophytic on decaying fungi.

ANALYSIS OF THE SPECIES.

I. PARASITAE.

Gills distinct, distant. Growing on decaying fungi.

II. SPELEAE.

Gills somewhat growing into each other, crowded. Growing in dark places, and in all probability nothing more than morbid conditions of other species.

I. PARASITAE.

Nyctalis parasitica. Fr.

Pileus up to $\frac{3}{4}$ in. across, flesh thin, conical then soon becoming expanded, unequal, pruinose from the presence of conidia, grey; gills adnate, thick, distant, at length anastomosing, brownish; stem 1–3 in. long, not 1 line thick, often wavy, equal, downy, whitish; spores broadly elliptical, smooth, $5 \times 3 \cdot 5\ \mu$.

Nyctalis parasitica, Fries, Hym. Eur., p. 464; Cke., Hdbk., p. 344; Cke., Illustr., pl. 1113.

Growing on *Russula adusta* and *R. foetens*.

Gregarious or caespitose. The conidia produced by the hyphae of the pileus are large, elliptical, and smooth.

Nyctalis asterophora. Fr. (fig. 5, p. 301.)

Pileus about ½ in. across, fleshy, conical then hemispherical, flocculose and rather mealy owing to the large, stellate conidia, whitish then tinged with fawn-colour; gills adnate, distant, narrow, rather forked, straight, dingy; stem about ½ in. long, slender, twisted, stuffed, white then brownish, rather mealy; spores elliptical, smooth, $3 \times 2\ \mu$.

Nyctalis Asterophora, Fries, Hym. Eur., p. 463; Cke., Hdbk., p. 344; Cke., Illustr., pl. 1132B.

Growing on old blackened specimens of *Russula nigricans*.

Gregarious or slightly caespitose. The very large stellate bodies borne by hyphae on the upper surface of the pileus have been shown by Brefeld to be true conidia, which, under proper cultivation, give origin to the fungus.

II. SPELEAE.

Nyctalis caliginosa. W. G. Sm.

Pileus about ½ in. across, very fleshy, margin involute, slightly exceeding the gills, marked with light and dark grey colours when wet, white and floccoso-pruinose when dry; gills decurrent, thick, branched; stem about 2 in. long, floccoso-pruinose, base naked; spores elliptical, smooth, $4 \times 2\frac{1}{2}\ \mu$.

Nyctalis caliginosa, W. G. Smith, Journ. Bot. 1873, p. 337; Cke., Hdbk., p. 343; Cke., Illustr., pl. 1132A.

On ground in a dark place, among fallen leaves.

Odour and taste rank and disagreeable, like *Polyporus squamosus*. (W. G. S.)

Caespitose; stem brown inside, white externally, much swollen at the base, where several are usually more or less grown together.

A doubtful species. Probably a diseased state of some *Clitocybe*. (Cooke.)

HYGROPHORUS. Fries. (fig. 1, p. 301.)

Pileus regular or variously undulated and wavy, often viscid or moist; gills more or less decurrent, or sometimes adnate or adnexed, waxy, often thick and forked, but the margin always thin and sharp, flesh of the pileus passing unchanged into the trama; stem central, continuous with the flesh of the pileus; spores subglobose or elliptical, smooth.

Hygrophorus, Fries, Hym. Eur., p. 405; Cke., Hdbk., p. 289.

Terrestrial, their development in many cases being favoured by the early autumnal frosts; soon decaying; often very fragile; many species are glutinous or viscid. Bright colours, as crimson, golden, lemon-yellow, &c., are not uncommon. The gills are usually distant, thick, and waxy, and in this respect the genus approaches *Cantharellus*, but always differs in the gills being broader and the margin or edge, thin and and sharp.

The essential character of the genus consists in the hymenium at length becoming soft and separating from the trama, a character remarkably well seen in *Hygrophorus caprinus*, *H. coccineus*, *H. nitrosus*, &c. (Fries.)

ANALYSIS OF THE SUBGENERA OF HYGROPHORUS.

Subgen. I. Hygrocybe. Fries, Syst. Myc., i. p. 101.

Veil absent; whole fungus slender, watery, fragile. Pileus viscid when moist, shining when dry, rarely floccosely scaly. Stem hollow, soft, not ornamented with granular or wart-like projections. Gills soft. Most species brightly coloured.

Subgen. II. Camarophyllus. Fries, Syst. Myc., i. p. 98.

Veil absent, stem even, glabrous or fibrillose, not rough with wart-like projecting points. Pileus firm, opaque, moist in rainy weather, but not viscid. Gills distant, arcuate.

Subgen. III. LIMACIUM. Fries, Syst. Myc., i. p. 31.

Universal veil viscid, partial veil floccose, often forming a trace of a ring, or attached to the margin of the pileus; stem covered with scales, or often with wart-like squamules near the apex. Gills adnato-decurrent.

ANALYSIS OF THE SPECIES.

Subgen. I. HYGROCYBE.

* Gills decurrent.

** Gills adnexed, eventually separating from the stem more or less completely.

* *Gills decurrent.*

Hygrophorus (Hygro.) Colemannianus. Blox.

Pileus up to 2 in. across, flesh thick at the disc, margin thin; somewhat campanulate, then expanded and strongly umbonate; pale umber, slightly striate, and viscid when moist, paler, except the disc, when dry; gills deeply decurrent, connected by veins, thickish, distant, pallid brown; stem 1–1½ in. long, nearly equal, often slightly curved, rather silky, pale, solid; spores elliptical, $7 \times 4\ \mu$.

Hygrophorus Colemannianus, Bloxam, in Berk., Outl., p. 200; Cke., Illustr., pl. 903; Cke., Hdbk., p. 298.

Among grass.

Pileus 1–2 in. broad, at first subcampanulate, at length expanded, strongly umbonate, reddish-umber, paler when dry, except in the centre; when moist striate and very obscurely viscid. Stem 1 in. or more high, 1–2 lines thick, brittle, fibrous, nearly equal, white, very slightly tinged with umber, somewhat silky; gills umber, but paler than the pileus, strongly decurrent, broad, distant; interstices strongly veined and rugose. (B. & Br.)

Hygrophorus (Hygro.) foetens. Phill.

Very foetid and nauseous. Pileus about 1 in. across, hemispherical then convex, at length expanded and some-

times slightly depressed, umber, dry, then more or less broken up and cracked; gills decurrent, about 1 line broad, grey; stem 1–1½ in. long, 1–1½ line thick, usually slightly thinner towards the base, olive-yellow, cracked up into transverse fibrous squamules; spores subglobose, apiculate, 4–5 μ diameter.

Hygrophorus foetens. Phillips, Grev., vii. p. 74; Cke., Hdbk., p. 299; Cke., Illustr., pl. 903B.

Among grass.

Gregarious or in small clusters. Distinguished by its small size, umber pileus, and very foetid smell.

Hygrophorus (Hygro.) sciophanus. Fr.

Pileus ½–1½ in across, disc fleshy, remainder membranaceous, hemispherical or obtusely campanulate, then expanded, always obtuse, rather viscid, disc even, faintly and remotely pellucidly striate towards the margin, deep tawny or vivid brick-red, opaque, very hygrophanous, pale when dry, becoming more or less lacerate and whitish when old; gills adnate, narrowed behind, at first evidently ascending, then plane, distant, usually distinct, coloured like the pileus, or sometimes with a rosy tinge; stem 1½–3 in. long, thin, everywhere equal, flexuous, even, glabrous, shiny, paler than the pileus, hollow.

Hygrophorus sciophanus, Fries, Epicr., p. 329; Cke., Hdbk., p. 299; Cke., Illustr., pl. 937A.

Among grass and moss.

Very elegant, densely gregarious, fragile, deep tawny, stem paler or whitish, never straight.

Spores very pale clay-coloured. There were two forms, one with a darker pileus and the flesh dark, the other paler, with the flesh also pale. The former only deposited spores; it is probable, therefore, that the pale form was not so fully developed. (Berk.)

Hygrophorus (Hygro.) lactus. Fr.

Pileus about 1 in. across, flesh thin, margin almost membranaceous, convex then expanded, obtuse, slimy, even or pellucidly striate towards the margin, tawny, shining, not becoming pale; gills somewhat decurrent, distant, thin, slightly connected by veins, generally flesh-coloured, but

varying to white, smoky, &c.; stem 2–3 in. long, about 2 lines thick, equal, tough, even, very glabrous, slimy, tawny, hollow, frequently undulated, and having the apex darker: spores elliptical, smooth, 7 × 4–5 μ.

Hygrophorus lactus, Fries, Monogr., ii. p. 18; Cke., Hdbk., p. 299; Cke., Illustr., pl. 938.

Hygrophorus Houghtoni, B. and Br., Ann. Nat. Hist., no. 1360; Cke., Hdbk., p. 299; Cke., Illustr., pl. 936.

Among grass and moss.

After examining the type specimens of *H. Houghtoni*, I quite agree with Dr. Cooke in uniting it with the present species.

Hygrophorus (Hygro.) vitellinus. Fr.

Pileus ½–1 in. across, disc rather fleshy, remainder very thin; glabrous, viscid, deep lemon-yellow, whitish when dry, margin plicato-striate; gills deeply decurrent, rather distant, deeper yellow than the pileus; stem about 2 in. long, scarcely line thick, even, glabrous, pale yellow, whitish when dry, very fragile, hollow, usually flexuous; spores elliptical, 6 × 4 μ.

Hygrophorus vitellinus, Fries, Monogr., ii. p. 312; Cke., Hdbk., p. 300; Cke., Illustr., pl. 904A.

In fields, &c.

Somewhat resembling *H. ceraceus*, but certainly different in the bright lemon-yellow colour of every part becoming almost white when dry, plicate margin of the pileus, and the deeply decurrent gills.

Hygrophorus (Hygro.) ceraceus. Wulf.

Pileus about 1 in. across, fragile, flesh thin, convex then more or less plane, obtuse, slightly viscid, pellucidly striatulate, waxy yellow, shining; stem 1–2 in. long, about 2 lines thick, often unequal and flexuous, smooth, coloured like the pileus, hollow; gills slightly decurrent, almost triangular, broad, distinct, yellow; spores elliptical, 8 × 6 μ.

Hygrophorus ceraceus, Cke., Hdbk., p. 300; Cke., Illustr., pl. 904B.

Agaricus ceraceus, Wulf., in Jacq. Coll., ii. t. 15, f. 2.

In pastures.

Fragile, readily distinguished from every other species by the unchangeable, wax-yellow colour. (Fries.)

Pileus 1 in. broad, convexo-plane, occasionally subumbonate, viscid, subcarnose, margin substriate. Gills very broad (¾ in.), ventricose, connected by veins. Stem 2–3½ in. long, 2 lines or more thick, flexuous, equal, or slightly unequal, sometimes compressed, yellow, occasionally orange at the base. (Berk.)

Pileus plano-convex, nearly 1 in. in breadth, yellow, shining, dry and sometimes concave in age. Lamellae rather broad, distant, yellow, decurrent; stipes rather slender, 2–3 in. long, hollow, often compressed, yellow, attenuated at the base. Plant subgregarious. (Grev.)

Hygrophorus (Hygro.) coccineus. Schaeffer.

Pileus 1–2½ in. across, convex then plane, often irregular, at first viscid, even, bright crimson, then becoming pale, not floccosely squamulose; flesh thin, coloured like the pileus and also descending into the similarly coloured trama; gills broadly adnate with a decurrent tooth, distant, connected by veins, soft and watery, base purplish, middle pale yellow, margin glaucous when adult; stem about 2 in. long, 3–4 lines thick, then compressed, almost even, not slimy, crimson above, base always pale yellow, hollow; spores elliptical, smooth, 10–12 × 6 μ.

Hygrophorus coccineus, Fries, Monogr., ii. p. 19; Cke., Illustr., pl. 920.

Agaricus coccineus, Schaeffer, Fung. Bav., t. 302.

Among moss and grass, and in open places.

Size variable. Distinguished from *H. puniceus*, by the broadly adnate gills and yellow base of stem, and from *H. miniatus* by its larger size the pileus being glabrous when old, and yellow base of stem.

Pileus 1–2 in. broad, at first obtuse, conico-campanulate, at length inverted, sometimes strongly umbonate, splitting from the centre, yellow, orange or scarlet, viscid when moist, when dry pallid, appearing to the eye fibrillose, but not really so; margin thin, more or less wavy. Gills broad, ventricose, wrinkled, thick, connected by veins, retaining their colour longer than the pileus, adnate, with a decurrent tooth in depressed specimens. Stem 1½ in. long, ⅓ in. thick, more or less hollow, subflexuous, smooth though apparently subfibrillose, tough but easily splitting. (Berk.)

Hygrophorus (Hygro.) miniatus. Fr.

Pileus ½–1 in. across, flesh thin, convex, obtuse, then umbilicate, at first even, glabrous, crimson, then becoming pale, opaque, and squamulose; gills adnate, not at all decurrent, distant, distinct, rather thick and firm, yellow or sometimes tinged more or less with crimson; stem 1½–2 in. long, about 1 line thick, even, glabrous, shining, crimson, equal, round, imperfectly stuffed; spores elliptical, 10 × 6 μ.

Hygrophorus miniatus, Fries, Monogr., ii. p. 19; Cke., Illustr., pl. 921 A.

Among grass in pastures, woods, &c.

Very fragile, much smaller than the other crimson or blood-red species, *H. coccineus* and *H. puniceus*. Pileus umbilicate, bleached, and squamulose when old.

Hygrophorus (Hygro.) turundus. Fr.

Pileus ½–¾ in. across, flesh thin, convex then expanded and depressed or umbilicate, covered with greyish-brown down, at length minutely squamulose; margin incurved, crenulate; gills decurrent, distant, white then yellowish; stem about 1½ in. long, slender, rigid, equal, shining, tawny, stuffed then hollow.

Hygrophorus turundus, Fries, Epicr., p. 330; Cke., Hdbk., p. 301.

On the ground.

Very fragile; allied to *H. miniatus* but very dissimilar. Pileus soon broken up into smoky floccose particles, but golden and viscid at first. (Fries.)

Var. **mollis.** B. and Br., Ann. Nat. Hist., no. 1279; Cke., Illustr., pl. 921 B.

Pileus ½–¾ in. across, nearly plane then slightly depressed, golden yellow, clad with short radiating fibrils of the same colour, stem equal, stuffed, 1–1½ in. long, slender, and yellow with a red tinge, base white, hollow; gills distant, arcuate, slightly decurrent; spores elliptical, 8 × 4 μ.

On naked soil.

In Cooke's figure, copied from Berkeley's drawing, the pileus is more or less crimson with golden fibrils.

Hygrophorus (Hygro.) mucronellus. Fr.

Pileus ½–¾ in. across, almost membranaceous, conical then campanulate, acutely umbonate, margin sometimes upturned

with age, glabrous, bright red, becoming pale; gills decurrent, triangular, thick, yellow; stem 1–1½ in. long, ½ line thick, equal, fibrous and rather silky, coloured like the pileus, base white, hollow.

Hygrophorus mucronellus, Fries, Epicr., p. 331; Cke., Hdbk., p. 301; Cke., Illustr., pl. 937B.

In grass fields.

Stem usually slightly curved. Known from the other small red species by the acute pileus and decurrent, triangular gills.

Hygrophorus (Hygro.) micaceus. B. & Br.

Pileus ¼–½ in. across, flesh thin, hemispherical, then expanded and sometimes slightly depressed, at first yellow, then becoming grey or with a tinge of green, wrinkled, sprinkled with micaceous particles; gills decurrent, narrow, pale umber; stem ¾–1 in. long, about 1 line thick, equal, yellow, then brown below, granulated, solid; spores 4 × 3 μ.

Hygrophorus micaceus, B. and Br., Ann. Nat. Hist., no. 1779; Cke., Hdbk., p. 301; Cke., Illustr., pl. 905B.

On clay soil.

Mycelium white. Whole plant turns brown when dry. (Berk. and Broome.)

Hygrophorus (Hygro.) Wynniae. B. & Br. (fig. 1, p. 301.)

Pileus ½–1 in. across, flesh equally thin; convex, umbilicate or rather infundibuliform, striate, hygrophanous, lemon-yellow, becoming greenish when dry; gills decurrent, narrow, thin, yellowish, then with a green tinge; stem about 1 in. long, and 1 line thick, slightly expanding upwards into the pileus, smooth, coloured like the pileus, hollow; spores elliptical, 7–8 × 6 μ.

Hygrophorus Wynniae, B. and Br., Ann. Nat. Hist., no. 1787; Cke., Illustr., pl. 905A; Cke., Hdbk., p. 301.

On chips, among twigs, &c.

A small but very distinct species; lemon-yellow, changing to a greenish tint as it loses moisture, remarkable for growing on chips and twigs.

** *Gills adnexed, then becoming free.*

Hygrophorus (Hygro.) puniceus. Fr.

Pileus 2–4 in. across, flesh very thin, at first campanulate, obtuse, usually wavy and lobed, very irregular, even, glabrous, viscid, deep crimson or blood-red, becoming pale, especially at the disc when old, or in dry weather; flesh similarly coloured, fragile; gills ascending, ventricose, 2–4 lines broad, thick, distant, yellowish-white or pale yellow, often tinged with red at the base, insertion various, but from the form of the pileus, ascending, and appearing to be free; stem about 3 in. long, ½–1 in. thick, solid when young, then hollow, very stout, not compressed, ventricose or attenuated at both ends, striate, apex generally squamulose, when dry yellowish or colour of the pileus, base always white, and often incurved; spores elliptical, 8 × 5 μ.

Hygrophorus puniceus, Fries, Monogr., ii. p. 21; Cke., Hdbk., p. 302; Cke., Illustr., pl. 922.

In mossy pastures, &c.

The largest species of the genus, and very showy. Commonly confounded with *H. coccineus*, but very distinct in the larger size, adnexed gills, and striate stem with a white base. (Fries.)

Hygrophorus (Hygro.) obrusseus. Fr.

Pileus 2–3 in. across, rigid and fragile, flesh very thin, campanulate then expanded, wavy, somewhat lobed and often lacerated, obtuse, dry, even, glabrous, golden-sulphur colour; gills adnexed, ventricose, but at length seceding from the stem and becoming free, very broad, up to ½ in. thick, distant, whitish; stem 2–3 in. long, ½ in. thick, broader when compressed, scarcely ventricose, sulphur-yellow, base becoming tawny, ascending, usually uneven, glabrous, hollow; spores elliptical with an oblique apiculus, 10–12 × 7 μ.

Hygrophorus obrusseus, Fries, Monogr., ii. p. 21; Cke., Illustr., pl. 906.

Grassy places in woods.

Not to be confounded with bleached forms of *H. puniceus*. When growing always golden-sulphur, not red. The gills are much more rigid and firmer than in allied species. (Fries.)

The tawny colour at base of stem not always evident in British specimens.

Hygrophorus (Hygro.) intermedius. Pass.

Pileus up to 2 in. across, flesh very thin everywhere, campanulate then expanded, obtuse, or sometimes with an indication of an umbo, almost dry, margin often wavy, golden-yellow then becoming greyish; gills adnate, ventricose, narrowed in front, 2 lines broad at the widest part, distant, whitish then yellow; stem 2–3 in. long, 3–4 lines thick, equal, fibrillosely striate, yellow, hollow; spores elliptical, 8–9 × 6 μ.

Hygrophorus intermedius, Passerini, Parm.; Cke., Hdbk., p. 302; Cke., Illustr., pl. 907.

Among grass.

Remarkable for possessing the smell of meal. Resembling *H. obrusseus* in size and general appearance, but distinguished by the pileus becoming grey, and the mealy smell.

Hygrophorus (Hygro.) conicus. Fr.

Pileus 1–2 in. high and across when expanded, fragile, flesh very thin, acutely conical, margin usually more or less lobed, at length cracking and turning up, glabrous, viscid when moist, shining when dry, yellow or sometimes more or less tinged with crimson; gills narrow behind and almost free, ventricose, rather crowded, thin, yellowish; stem 3–4 in. long, 3–4 lines thick, cylindrical, fibrously striate, yellow, hollow; spores elliptical, 10–11 × 6–8 μ.

Hygrophorus conicus, Fries, Epicr., p. 331; Cke., Hdbk., p. 302; Cke., Illustr., pl. 908.

In pastures.

Every part usually turning black when bruised, or as the plant becomes old.

Pileus 1–2 in. high, acutely conic, variously waved and lobed, fibrillose, viscid when moist or young, juicy, turning black, as does the whole plant when broken or bruised, orange, yellow, scarlet, brown, dusky, &c., various colours often blended together. Gills thick, fleshy, ventricose, attenuated behind free or adnexed, yellowish with frequently a cinereous tinge. Stem 3–4 in. long, 2–5 lines thick, often *splitting* fibrilloso-striate, coloured like the pileus. Fries

has observed the gills to pour forth a sulphur-coloured milk, like *A. scrobiculatus*. (Berk.)

Readily distinguished from allied species by the following characters:—stem hollow, straight, cylindrical, fibrosely striate; pileus submembranaceous, acutely conical, glabrous, more or less-lobed, then expanded and cracked, not becoming pale when dry, as in allied species, but shining in dry weather, and becoming blackish in rainy weather; gills narrowed behind and almost free; ventricose, thin, rather crowded, but varies to yellow, whitish, smoky, and in purple-crimson forms, reddish at the base. (Fries.)

A polymorphous plant, especially in regard to colour. Pileus acutely conical, smooth, shining, particular when young, fleshy, margin striate, irregular, frequently lobed, 1–2 in. from the base to the apex of the cone, becoming partly expanded in age, the margin sometimes turning up, and even revolute, mostly some shade of deep yellow, orange, or bright red, often intermixed with each other, in some varieties brown or even black, the brightest colour then remaining longest at the margin; lamellæ numerous, more or less deep yellow, ventricose, but attenuated towards the stipes, to which they are frequently slightly attached. Stipes hollow, with a great tendency to split, variously coloured, like the pileus, 2–3 in. high, diameter various. (Grev.).

Hygrophorus (Hygro.) calyptraeformis. Berk.

Pileus 1½–2½ in. high and the same across when expanded, flesh very thin, at first acutely conical, then splitting and expanded, the margin eventually much upturned, innately fibrillose, pale clear rose-colour, becoming paler with age; gills narrowed behind and slightly adnexed 1–1½ line broad, rather distant, pale rose-colour then whitish; stem 3–4 in. long, ¼–½ in. thick, slightly striate, white, fragile hollow; spores elliptical, 7×4 μ.

Hygrophorus calyptraeformis, Berk., Outl., p. 202; Cke., Hdbk., p. 303; Cke., Illustr., pl. 894.

Among grass.

Habit of *H. conicus*, but very distinct in colour and in not turning black. A very beautiful species. Fragile.

Var. **niveus**, Cke., Hdbk., p. 303; Cke., Illustr., pl. 923.

Size and form of the typical species, but entirely snow-white.

Among grass.

Hygrophorus (Hygro.) chlorophanus. Fr.

Pileus about 1 in. across, somewhat membranaceous, very fragile, at first convex, then plane, obtuse, orbicular, lobed, at length cracked, glabrous, viscid, striate, not becoming discoloured, usually bright sulphur, sometimes truly crimson; gills emarginate, adnexed, very ventricose, with a small decurrent tooth, rather distant, distinct and thin; stem hollow, equal, round, rarely compressed, 2–3 in. long, 2–3 lines thick, everywhere even, glabrous, viscid when moist, shining when dry, everywhere deep yellow; spores elliptical with an apiculus, 8 × 5 μ.

Hygrophorus chlorophanus, Fries, Monogr., ii. p. 23; Cke., Hdbk., p. 303; Cke., Illustr., pl. 909.

Grassy places, especially in woods.

Closely allied to *H. conicus*, but does not become black after being bruised, and the obtuse pileus separates the two. Differs from *H. ceraceus* in the bright sulphur-yellow colour, watery substance, and emarginate gills. (Fries.)

Hygrophorus (Hygro.) psittacinus. Schaeff.

Pileus about 1 in. across, flesh thin, campanulate then expanded, more or less acutely umbonate, vaguely-striate, yellow or orange, covered with an evanescent green gluten; gills adnate, 1 line or more broad, ventricose, distant, thick, yellow with more or less green; stem 1–2 in. long, 1–2 lines thick, equal, even, often a little curved, yellow, generally green at the apex, hollow; spores elliptical, 10 × 5 μ.

Hygrophorus psittacinus, Cke., Hdbk., p. 303; Cke., Illustr., pl. 910.

Agaricus psittacinus, Schaeffer, Icon., t. 301.

In pastures, &c.

Whole plant green at first, at length almost entirely yellow, except the summit of the stipes, which frequently, remain green to the last, pileus about 1 in. in breadth, conical, becoming somewhat plane or umbonate, or, at least, spreading at the margin, smooth, glutinous, striated when moist, the edge subentire, often cracking. Flesh thin, yellowish. Lamellae rather thick and somewhat distant,

slightly attached to the stipes, broadest in the centre, bright yellow, frequently shaded with green. Stipes hollow, splitting, very viscid, 2–3 in. high, about 2 lines thick, sometimes compressed, mostly crooked at the base, green above, yellow below. The colour of the whole plant varies greatly in intensity. It bears the nearest affinity to *Ag. conicus* (= *Hygrophorus conicus*), from which indeed it is difficult to separate it by a written character. The strongest difference resides in the green colour, which is fortunately very constant. It may be added, that the lamellae are crowded in *Ag. conicus*, and not adnate with the stipes, that the pileus, when young, forms a much higher cone, and that the margin is very irregular, being frequently even lobed. (Grev.)

Hygrophorus (Hygro.) spadiceus. Fr.

Pileus 2–4 in. across, flesh thin, campanulate then expanded, obtuse, very glutinous, distinctly virgate with black fibrils, olive-bay, black when dry, shining; gills broad and rounded behind, rather thick, broad, lemon-yellow, distant: stem about 3 in. long, 3–4 lines thick, dry, striato-virgate with brownish fibrils, fundamental colour yellowish, equal, straight, hollow; spores elliptical, 6–7 × 4 μ.

Hygrophorus spadiceus, Fries, Epicr., p. 332; Cke., Hdbk., p. 304; Cke., Illustr., pl. 1161.

In mossy meadows, &c.

Very similar to *H. conicus*, but the substance is firmer, never presenting a scorched, blackish appearance while growing or when bruised; pileus quite black when dry; distinctly virgate, more glutinous when moist and not striate; gills thicker, more distant, and not narrowed behind.

Hygrophorus (Hygro.) unguinosus. Fr.

Pileus about 2 in. across, flesh thin, campanulate then convex, obtuse, covered with a tenacious smoky-brown, dripping gluten, even, at length cracking: gills adnate but very ventricose, distant, thick, broad, connected by veins, whitish becoming rather glaucous, soft; stem about 2 in. long, 3 lines thick, usually attenuated at base and apex, unequal, more or less compressed, glutinous, coloured like the pileus, hollow; spores 10 × 7–8 μ.

Hygrophorus unguinosus, Fries, Epicr., p. 332; Cke., Hdbk., p. 304; Cke., Illustr., pl. 924.

In moist woods, &c.

Very fragile; covered with a dense smoke-coloured gluten when growing. (Fries.)

Very fragile, inodorous, covered with gluten when growing, sooty, unchangeable, stem 2–3 in long, 3 lines thick, usually attenuated at base and apex, colour of the pileus. Pileus slightly fleshy, covered with a tenacious gluten that falls away in drops, even or slightly rivulose, about 2 in. across; gills distant, thick, up to 4 lines broad, connected by veins, soft, becoming glaucous. (Fries.)

Hygrophorus (Hygro.) nitratus. Pers.

Fragile; smell very strong, nitrous. Pileus 1½–2½ in. across, *flesh thin*; *campanulate then expanded and usually* wavy, viscid, soon dry and breaking up into minute squamules, dingy greyish-brown; gills adnate, soon separating *from the stem, broad, distant, white then glaucous*; stem 2–3 in. long, up to ¼ in. thick, unequal, more or less compressed, polished, whitish or yellowish, imperfectly hollow; spores elliptical, $8 \times 5\ \mu$.

Hygrophorus nitratus, Cke., Hdbk., p. 304; Cke., Illustr., pl. 925.

Hygrophorus murinaceus, Fries, Epicr., p. 333.

Agaricus nitratus, Persoon, Syn., p. 356.

In pastures.

Stature of *H. coccineus*, but differing altogether in colour and strong nitrous smell. Stem often yellowish.

A very distinct species, distinguished by the dingy colour, and strong nitrous smell. Size and habitat very variable.

(A). *Major*, stem hollow, equal, but often twisted, at length more or less compressed, fragile, 2–3 in. long, 3–5 lines thick, externally polished, glabrous, white, composed of thick, crisp fibres. Pileus scarcely fleshy, very fragile, convex, obtuse, or having the centre depressed, slightly viscid at first, soon flocculose then squamulose, and cracked, deformed, rather wavy, becoming pale, 2 in. broad. Gills broadly emarginate, very broad, up to ¾ in., obliquely ovate, distant, thick, soft, connected by veins, whitish then glaucous. (B). A smaller form in sunny places among grass,

stem 1 in. and more long, 1–3 lines thick, unequal, usually compressed and wavy, sometimes becoming yellowish. Pileus when young viscid when moist, smooth, brown, but soon dry and cracked into squamules, grey, ½–1 in. across. Gills at first adnate, with a decurrent tooth, white, then ventricose and glaucous, but broad and thick. (Fries.)

Var. **glauco-nitens,** Fries, Epicr., p. 54; Cke., Hdbk., p. 304.

Rigid; pileus fibrillosely virgate; blackish-olive or sooty, becoming pale; stem equal, shining, gills becoming glaucous; spores elliptical, 8 × 6 μ.

Among grass.

Subgen. II. CAMAROPHYLLUS.

* Gills deeply and at length obconically decurrent.

** Gills plano-adnate or sinuately arcuate, ventricose.

Hygrophorus (Camar.) caprinus. Scop.

Pileus 3–4 in. across, flesh thick at the disc, thinning out towards the margin; conical then expanded and umbonate, becoming depressed and rather wavy, moist, virgate, sooty-brown or blackish; gills deeply decurrent, very broad and very distant, thick, pure white then glaucous; stem 2–3 in. long, ½–¾ in. thick, more or less equal, fibrillose, sooty; solid, expanding at the apex into the flesh of the pileus; spores broadly elliptical, smooth, 10 × 7–8 μ.

Hygrophorus caprinus, Cke., Hdbk., p. 294; Cke., Illustr., pl. 916.

Agaricus caprinus, Scopoli, Carn., ii. p. 438.

In pine woods, &c.

The largest species of the genus, and very distinct, scarcely comparable with any other species. Pileus sometimes blackish or bluish, at first with a nut-shaped umbo. Gills somewhat branched, soft when adult, waxy, the hymenium separating from the trama. (Fries.)

Hygrophorus (Camar.) leporinus. Fr.

Pileus about 2 in. across, equally and very fleshy, convex, gibbous, equal, broken up into floccose fibrils, reddish-

yellow, opaque; gills decurrent, rather narrow, yellowish-red; stem about 2 in. long, ⅜ in. thick, or sometimes more, attenuated at the base or more or less fusiform, solid, fibrillose, pallid, sometimes tawny at the base; spores subglobose, 5–6 μ diameter.

Hygrophorus leporinus, Fries, Epicr., p. 326; Cke., Hdbk., p. 294; Cke., Illustr., pl. 930.

On open downs, &c., also in woods.

Closely resembling *H. pratensis.* Stem rigid, usually attenuated below, rarely at the apex. Pileus 1–2 in. broad, cuticle broken up into floccose tufts, colour yellowish-rufous or brownish. (Fries.)

Hygrophorus (Camar.) nemoreus. Fr.

Pileus 1½–2½ in. across, flesh thick, attenuated to a very thin margin; convex, then expanded and gibbous or depressed, almost glabrous, tawny-orange; gills decurrent, thick, distant, about 1½ line broad, as deeply coloured as the pileus, stem about 2 in. long, ½ in. or more thick at the apex, slightly attenuated towards the base, or sometimes subequal or slightly ventricose, stuffed, firm, whitish, fibrosely striate and minutely scaly; spores elliptical, $6 \times 5 \mu$.

Hygrophorus nemoreus, Fries, Epicr., p. 326; Cke., Hdbk., p. 294; Cke., Illustr., pl. 931.

In pastures.

Allied to *H. pratensis* and chiefly distinguished by the squamulose, pale stem.

Hygrophorus (Camar.) pratensis. Fr.

Every part yellowish-tawny or buff. Pileus 1–3 in. across, very fleshy at the disc, but thin towards the margin, convex, then expanded, almost turbinate with the stem thickened upwards; even, glabrous, moist in rainy weather, but not viscid, often cracked when dry; flesh firm, white, apparently formed from the upward dilatation of the stem. Gills remarkably decurrent, at first arcuate, very distant, firm, fragile, connected by veins at the base, very broad at the middle; stem 1½–2 in. long, stuffed, spongy within, polished and even externally, firm, ½ in. and more thick at the apex, attenuated downwards, even, glabrous, naked; veil absent; spores elliptical, $6 \times 4 \mu$.

Hygrophorus pratensis, Fries, Monogr., ii. p. 12; Cke., Hdbk., p. 294; Cke., Illustr., pl. 917.

Among grass in pastures, also in woods.

Very variable. Specimens are sometimes entirely white, others grey; stem often white; when the pileus is especially thin, the margin becomes striate. (Fries.)

Pileus variable, often monstrous, firm, 1–2 in. broad, compact, margin thin, very dry, smooth, deep buff, convex, more or less umbonate, rarely becoming quite plane, but frequently remaining obtusely conical. Lamellae very distant, thick, arched, decurrent, reddish-buff. Stipes 1–2 in. high, ¼–½ in. thick, firm, generally somewhat crooked, attenuated towards the base, same colour as the pileus, but rather paler, solid spongy in the centre. (Grev.)

Var **pallidus**, B. & Br., Ann. Nat. Hist., no. 1356; Cke., Illustr., pl. 932A.

Pileus depressed or infundibuliforum, margin waved, often bent down; stem dilated, fibrillosely striate; gills distant, decurrent; branched, pallid; wholly ochraceous-white.

Among grass in pastures.

Var. **cinereus**, Fries, Hym. Eur., p. 413; Cke., Illustr., pl. 392B.

Pileus grey; thinner than the typical form, margin at length striate; stem often whitish.

In grassy places.

Hygrophorus (Camar.) virgineus. Wulf.

Entirely white. Pileus 1½–3 in. across, fleshy in the centre, thin towards the margin; convex, soon plane, obtuse then usually depressed, moist, minutely cracked into areolae, downy when dry; gills decurrent, about 1½ line broad, rather thick, distant; stem 1½–2 in. long, 3–5 lines thick at the apex, which gradually expands into the pileus, narrowed downwards, firm, smooth, solid; spores elliptical, 8–10 × 5 μ.

Hygrophorus virgineus, Cke., Hdbk., p. 295; Cke., Illustr., pl. 892.

Agaricus virgineus, Wulf., in Jacqu. Miscell., ii. t. 15. f. 1.

Among grass.

Distinguished from *H. niveus* by its larger size and fleshy pileus.

Commonly confounded with *Hygr. niveus* on account of the

white colour of every part, but to me it is more difficult to distinguish from *H. pratensis*, with which it agrees in the firm, short, stuffed stem attenuated downwards, smooth and naked externally; pileus fleshy, convex then plane, at length somewhat depressed, moist in damp weather; flesh sometimes equal, sometimes abruptly thin, striate; gills decurrent, distant, rather thick. Distinguished from *H. pratensis* more especially by its small stature, constantly white colour, sometimes becoming pallid, pileus obtuse, scarcely turbinate; at length cracked in an areolate manner, and floccose when dry, thin gills, &c. Certain individuals often difficult to distinguish from allied species. (Fries.)

Var. **roseipes**, Mass., in Cke., Hdbk,, p. 295; Cke., Illustr., pl. 893. Size of the typical form, differing in the stem soon becoming hollow and rosy towards the base; spores pip-shaped, 12 × 5–6 μ.

In fir woods, &c.

Hygrophorus (Camar.) niveus. Fr.

Entirely white; pileus ½–1 in. across, almost membranaceous, without a fleshy disc, hence truly umbilicate, campanulate then convex, glabrous, striate and viscid when moist, not cracked when dry; flesh thin, everywhere equal, white, hygrophanous. Gills decurrent, distant, thin, scarcely connected by veins, arcuate, quite entire; stem hollow, equal, 2 in. or more long, 1–2 lines thick, straight, even, glabrous; spores elliptical, 7–8 × 4–5 μ.

Hygrophorus niveus, Fries, Epicr., p. 327; Cke., Hdbk., p. 295; Cke., Illustr., pl. 900A.

Among grass, moss, &c.

More slender, tougher, hygrophanous, and appearing later in the season than *H. virgineus*. White, hygrophanous, shining white when dry. Smell none, and in this respect differing from *H. russo-coriaceus*.

Hygrophorus (Camar.) russo-coriaceus. B & Br.

White; fragrant. Pileus ½–¾ in. across, persistently convex, disc very fleshy, becoming very thin towards the margin, smooth, rather viscid; gills decurrent, 1½ line broad, thick, very distant; with shorter ones between, arched, white; stem up to 1 in. long, 1½–2 lines thick at the apex, which

widens into the flesh of the pileus, slightly narrowed towards the base, smooth, white, solid; spores elliptical, 8 × 5 μ.

Hygrophorus russo-coriaceus, B. & Br., Ann. Nat. Hist., no. 332; Cke., Hdbk., p. 296; Cke., Illustr., pl. 900B.

In pastures, &c.

About the size of *H. niveus*, but very distinct in the thick flesh at the disc of the persistently convex pileus, which is not at all umbilicate, the thick, distant gills, and the strong scent. The stem is stout and expanding upwards into the pileus, both in Berkeley's type specimens and in his sketches, nevertheless a thin-stemmed form, as described by B. & Br. in the following note, may have occurred.

Pileus about ½ in. in diameter, convex, fleshy, slightly viscid, ivory-white. Stem ¾–1 in. high, not a line thick, incrassated upwards, smooth, solid, pure white. Gills thick, broad, arched, decurrent, very few and distant, with a few shorter ones intermixed. The whole plant exhales a strong musky smell, like that of Russian leather, or *Potentilla atrosanguinea*, which it sometimes retains for years. It is at once known by its delightful odour. (B. & Br.)

Hygrophorus (Camar.) ventricosus. B. & Br.

Pileus 2–3 in. across, very fleshy at the disc, margin thin; persistently convex, sometimes irregular, white; gills deeply decurrent, narrow, white; stem 2–3 in. high, ½–⅔ in. at the thickest part, ventricose, solid, smooth, white; spores elliptical, 7 × 4 μ.

Hygrophorus ventricosus, B. & Br., Ann. Nat. Hist. no. 1777; Cke., Hdbk., p. 296; Cke., Illustr., pl. 901.

Among grass.

Stem often becoming imperfectly hollow; gills sometimes forked. Known among the entirely white species by the very fleshy pileus, and stout ventricose stem.

** *Gills adnate or sinuate.*

Hygrophorus (Camar.) fornicatus. Fr.

Pileus 1–2 in. across, flesh thin, campanulate then expanded, obsoletely umbonate, somewhat wavy, viscid, even, glabrous, white, or livid; gills sometimes almost free, at

others slightly adnexed with a decurrent tooth, thick, ventricose, distinct, distinct, projecting beyond the margin of the pileus, white; stem solid, or hollow at the apex, compact, firm, tough, equal, 2–3 in. long, 3–4 lines thick, rather wavy, glabrous, shining white; spores elliptical, 5–6 × 3 μ.

Hygrophorus fornicatus, Fries, Epicr., p. 327; Cke., Hdbk., p. 296; Cke., Illustr., pl. 993.

Among grass and moss.

Agreeing with *H. pratensis* in the structure of the pileus and stem, but very different in the insertion of the gills, and in being entirely white. Fries says that the base of the stem is sometimes furnished with fuscous squamules.

Hygrophorus (Camar.) distans. Berk.

Pileus 1–1½ in. across, flesh rather thin; plane or depressed, sometimes with an indication of an umbo, viscid, white with a silky gloss, here and there stained with brown; gills adnate with a very slight tendency to become decurrent, broad behind, very distant, pure white; *stem 1–1½ in. long*, 2–3 lines thick, slightly attenuated and grey below, white above, stuffed; spores broadly elliptical, 10 × 8 μ.

Hygrophorus distans, Berk., Outl., p. 200, t. 13, f. 1; Cke., Hdbk., p. 296; Cke., Illustr., pl. 902.

In woods.

A neat species with a regular pileus. Distinguished among species with a white pileus by the very distant, adnate gills. In Cooke's figures the stem is entirely white.

Hygrophorus (Camar.) Clarkii. B. & Br.

Pileus 1½–2 in. across, fragile, flesh thin, convex then more or less plane, somewhat umbonate, smooth, margin even, viscid, livid grey; gills broadly adnate with a decurrent tooth, up to 5 lines broad, thick, distant, white; stem 2–3 in. long, about 2 lines thick, equal, smooth, grey, base white, often slightly bent, hollow; spores subglobose, smooth, 12 × 10 μ.

Hygrophorus Clarkii, B. & Br., Ann. Nat. Hist., no. 1358; Cke., Hdbk., p. 297; Cke., Illustr., pl. 934A.

In woods, &c.

A very fine species, characterised by the livid grey stem and pileus, the very broad, distant, adnate gills, and the

large subglobose spores. *H. distans* differs in the white umbilicate pileus.

Hygrophorus (Camar.) metapodius. Fr.

Pileus 1½–3 in. across, flesh ¼ in. thick at the disc, pale grey, convex then plane, obtuse, at first even and somewhat shining, then silky and squamulose, irregular, greyish-brown: gills variable in mode of attachment, adnate, broadly emarginate or arcuato-decurrent, distant, thick, veined, about 3 lines broad, greyish-white; stem stuffed, 1–2 in. long, ¼ in. and more thick, attenuated towards the base, unequal, ascending, glabrous, grey, reddish inside; spores elliptical, 8 × 5 μ.

Hygrophorus metapodius, Fries, Epicr., p. 328; Cke., Illustr., pl. 218.

In mossy pastures, &c.

Very distinct from *H. ovinus*, the only species to which it is allied, in the thick flesh, fragility, and often deformed when growing in clusters. From the thick flesh becoming reddish and afterwards blackish when broken, and the juicy gills, the present species is very analogous with *Russula adusta*. Smell resembling new meal, taste sweet. (Fries.)

Hygrophorus (Camar.) ovinus. Bull.

Pileus 1½–2½ in. across, flesh thin, campanulate then expanded, rather umbonate, at first rather viscid and even, then dry and squamulose, brown, at length revolute, wavy, cracked, blackish in large forms; gills arcuato-adnate, with a decurrent tooth, distant, thick, usually 3 lines broad, connected by veins, and sometimes divided, grey then tinged rufous, margin thin, quite entire; stem about 2 in. long, 3 lines thick, almost equal, or slightly thickened at each end, curved or twisted, compressed, glabrous, rather polished, pallid, or in large specimens blackish-brown; spores broadly elliptical, 5 × 3–4 μ.

Hygrophorus ovinus, Fries, Monogr., ii. p. 15; Cke., Illustr., pl. 934B.

Agaricus ovinus, Bull., Champ., t. 580.

In mossy pastures, also in woods.

Closely allied to *H. metapodius*, smell almost the same; very fragile, but differing in the rigid, fragile, very thin

pileus, at first almost conical; stem not attenuated downwards, at length hollow, and thinner gills. (Fries.)

Pileus about 1 in. broad, brownish or subochraceous, subcarnose, at first conic, obtuse, afterwards expanded with a strong umbo, much waved and split at the margin, which is at first involute and minutely tomentose; the surface rimose. Gills distant, broad in front, ventricose, acutely arcuato-adnate, thick, connected and traversed by veins, white with a slight reddish-cinereous tinge. Stem 1–1½ in. high, 2–4 lines thick, nearly equal, stuffed, at length hollow; pruinose above, with sometimes a few superficial squamulae towards the base. (Berk.)

Hygrophorus (Camar.) subradiatus. Fr.

Pileus 1½–2 in. across, disc rather fleshy, remainder almost membranaceous, somewhat umbonate, brownish, especially at the disc, radiately striate; gills broadly adnate with a decurrent tooth, ventricose, thin, distant, white; stem 1½–2½ in. long, 2–3 lines thick, equal, glabrous, pallid, base white, hollow; spores broadly elliptical, smooth, 8 × 5 μ.

Hygrophorus subradiatus, Fries, Epicr., p. 328; Cke., Hdbk., p. 297; Cke., Illustr., pl. 935A.

On ground, among heather, &c.

Stem often twisted. Pileus variable in colour, whitish, livid, or livid with a reddish tinge. (Fries.)

Var. **lacmus**, Fries, Monogr., ii. p. 16; Cke., Illustr., pl. 935B. ?

Pileus about 1 in. across, fragile, disc fleshy, the rest membranaceous, plane then depressed, sometimes at the same time umbonate, margin irregular, radiato-striate when moist, even and shining when dry, usually glabrous but sometimes fibrillose or squamulose at the disc, lilac then pallid; gills very slightly decurrent; 1 line broad, thin, rather distant, connected by veins, grey; stem 2–2½ in. long, often twisted, glabrous, somewhat shining, stuffed then hollow, base and apex narrowed; spores 8 × 5–6 μ.

Among moss, &c.

Cooke's figure does not at all agree with Fries' description in his Monogr. as given above.

Hygrophorus (Camar.) irrigatus. Fr.

Pileus 1–2½ in. across, flesh very thin, campanulate then

expanded, indistinctly umbonate, often becoming depressed round the umbo, and the margin upturned and more or less striate when old, livid with a tinge of brown at the disc, moist in rainy weather but not viscid; gills adnate with a slight decurrent tooth, ventricose, 3–4 lines broad, thickish, rather distant, whitish; stem 2–3 in. long, 2–3 lines thick, hollow, rather tough, glabrous, grey, very viscid, often compressed; spores elliptical, 6–7 × 4 μ.

Hygrophorus irrigatus, Fries, Epicr., i. p. 39; Cke., Hdbk., p. 298; Cke., Illustr., pl. 919.

Amongst grass.

Hygrophorus unguinosus resembles the present species, but is distinguished by the viscid pileus. *H. Clarkii* is readily distinguished by the globose spores.

Hygrophorus (Camar.) clivalis. Fr.

Pileus about 1½ in. across, disc rather fleshy, remainder very thin, fragile, at first campanulate, obtuse, margin incurved, flexuous, glabrous, even, opaque, then expanded and gibbous, irregular, often cracked, polished, shining, striate owing to the thinness of the margin; gills at first adnexed, crowded, very ventricose when the pileus is expanded, distant, rather thick, fragile; attenuated behind, or free, or arcuate and with a decurrent tooth; stem solid, flesh fibrous, not more than 1 in. long, 3–4 lines thick, attenuated at the base, round or compressed and curved, even, glabrous, fragile, mostly white.

Hygrophorus clivalis, Fries, Monogr., ii. p. 134; Fries, Hym. Eur., p. 414.

Amongst grass in damp places.

Pileus somewhat gibbous, not viscid; distinguished from *H. distans* in the gills being narrowed behind and nearly free.

Subgen. III. LIMACIUM.

* White, or becoming yellowish.

** Reddish.

*** Tawny, or yellow.

**** Olivaceous umber.

***** Dingy grey, or livid.

* *White, or becoming yellowish.*

Hygrophorus (Lima.) chrysodon. Fr.

Pileus 2–3 in. across, convex then plane, obtuse, viscid, white, shining when dry, but the disc usually becoming yellowish, and with minute, adpressed squamules, margin with yellow fibrils; flesh white, sometimes tinged red; gills decurrent, distant, 3 lines broad, thin, white, margin yellowish, sometimes crisped; stem stuffed, soft, almost equal, 2–3 in. long, about ½ in. thick, white, with minute yellow squamules, crowded towards the apex in the form of a ring; spores elliptical, 8 × 4 μ.

Hygrophorus chrysodon, Fries, Monogr., ii. p. 3; Cke., Illustr., pl. 885.

On the ground in woods, &c.

Readily known by the white colour of every part, and by having the margin of the gills, margin of pileus, and upper portion of stem more or less tinged yellow.

It not only grew under the lime underwood, but amongst grass in the open glades. It resembles very closely in many respects, *Hygr. eburneus*, but is beautifully distinguished by the golden yellow pubescence which is sprinkled here and there over the plant, but principally on the stem, and margin of the pileus. Sometimes the gills are elegantly edged with yellow flocci. The smell is strong, like that of *Hygr. cossus*. (Berk.)

Hygrophorus (Lima.) eburneus. Bull.

Everywhere white. Pileus 1–2 in. across, flesh rather thick at the disc, thin towards the margin; convex then almost plane, even, viscid, margin at first incurved and downy, soon naked; gills decurrent, distant, firm, straight, about 1½ line broad; stem 1½–3 in. long, attenuated towards the base, viscid, rough at the apex with wart-like squamules, stuffed then hollow; spores broadly pip-shaped, 5 × 4 μ.

Hygrophorus eburneus, Cke., Hdbk., p. 289; Cke., Illustr., pl. 886.

Agaricus eburneus, Bulliard, Champ. Fr., t. 551, f. 2.

In woods.

Resembling *H. cossus* in general appearance, but the colour is a much purer white, and the smell weak, but pleasant.

Pileus white, smooth, slimy when young and in wet weather, shining when dry, 1–2 in. broad, more or less umbonate, the margin turning up in age. Lamellae distant, white, thick, very decurrent, broad. Stipes 1–3 in. high, slightly crooked, firm, scurfy or nearly smooth, often attenuated at the base, solid, becoming hollow in age. (Grev.)

Altogether shining white; pileus and stem very glutinous in rainy weather; stem rough with points at the apex; pileus involute when young at the margin, which is downy, but soon naked. Size very variable, pileus convex then plane, somewhat wavy, even, glabrous, thin or rather thick in the flesh. Stem sometimes short, sometimes elongated, but soft within and at length hollow, thinner towards the base, apex scabrid. Gills decurrent, distant, veined at the base, 3–4 lines broad, straight, quite entire. Smell sweet, not unpleasant. (Fries.)

Hygrophorus (Lima.) cossus. Sow.

Pileus 1–2 in. across, flesh rather thick, convex then plane, obtuse, glabrous, glutinous, shining when dry, white with a yellow tinge, disc somewhat ochraceous; flesh white; gills adnato-decurrent, distant, connected by veins, firm, white; stem 2–3 in. long, sometimes more, 2–5 lines thick, about equal, white, scurfy or rough with points above, white, often with a yellow tinge; spores elliptical, 7–8 × 4–5 μ. Smell very strong, resembling that of the goat-moth.

Agaricus cossus, Sow., t. 121.

Hygrophorus cossus, Fries, Epicr., p. 321; Cke., Hdbk., p. 289; Cke., Illustr., pl. 887.

Among grass in woods, &c.

Allied to *H. eburneus*, differs in the yellowish pileus having the margin naked from the first, and especially in the unpleasant smell, resembling that of the goat-moth. (Fries.)

Pileus 1½ in. broad, pure white, slimy (slime consisting of round and oval bodies under a high magnifier), shining when dry, stained here and there with yellowish; the disc sometimes subochraceous. Gills broad, thick, distant, adnato-decurrent, connected by veins and themselves slightly veined. Spores white, elliptic. Stem 2½ in. high, 1–3 lines thick,

nearly equal, here and there yellow when bruised. Smell like that of the larva of the goat-moth, or a damp meadow, and remaining for a long time on the fingers after touching it. (Berk.)

Hygrophorus (Lima.) pulverulentus. B. & Br.

Pileus about ½ in. across, fleshy, convex, sometimes becoming slightly depressed, viscid, white, margin slightly incurved, downy; gills decurrent, thick, margin rather thick, whitish; stem about ¾ in. long, nearly 1 line thick, slightly curved, equal or attenuated at the base, white but powdered with rosy meal; spores globose, 7 μ diameter.

Hygrophorus pulverulentus, B. and Br., Ann. Nat. Hist., no. 1669; Cke., Hdbk., p. 290; Cke., Illustr., pl. 895A.

Among pine leaves, &c.

Distinguished by its small size and rose-powdered stem.

Hygrophorus (Lima.) penarius. Sow.

Pileus 2–3 in. across, fleshy, especially when young, at first umbonate, then very obtuse, hemispherical then expanded, even, glabrous, usually dry, opaque, tan-colour; margin involute at first, extending beyond the gills, then expanded and wavy; flesh thick, hard, whitish, unchangeable; gills very slightly decurrent, distant, thick, 3–4 lines broad, veined, pallid-tan; stem 1½–2 in. long, apex up to ½ in. thick, ventricose or attenuated downwards and terminating in a long, fusiform root, solid, compact, hard, pallid-white, covered with sticky gluten which soon becomes dry and roughened; veil not evident; spores elliptical, 7–8 × 3–4 μ.

Agaricus penarius, Sow., t. 71.

Hygrophorus penarius, Cke., Hdbk., p. 290; Cke., Illustr., pl. 895B.

In mixed woods.

Stem hard, at first hard and thickened from the apex, then attenuated at both ends, dry, but rough from the dried gluten. Smell agreeable.

** *Reddish.*

Hygrophorus (Lima.) erubescens. Fr.

Pileus 2–5 in. across, fleshy, gibbous then convexo-plane, viscid, adpressedly squamuloso-punctate, then almost

glabrous, flesh sometimes everywhere thick, at others thin towards the margin, which is naked from the first, fundamental colour everywhere white, also the flesh, but becoming reddish all over, the pileus often blood or rose-red; gills decurrent, distant, soft, white, variegated with red spots; stem solid, sometimes short, about 2 in. long, robust, 1 in. thick and attenuated upwards; at other times elongated, 4 in. long, equal or attenuated at the base, flexuous, with red fibrils and red points at the apex; veil absent.

Hygrophorus erubescens, Fries, Mon., ii. p. 5; Cke., Hdbk., p. 290; Cke., Illustr., pl. 888.

Under pines, &c., gregarious, often forming large, lax circles.

Hygrophorus (Lima.) pudorinus. Fr.

Pileus 2–4 in. across, fleshy, convex then expanded, obtuse, even, glabrous, viscid, vermilion flesh-colour (the colour pure and not squalid, as in *H. erubescens*), the fundamental colour appears to be yellow; margin naked, involute; flesh white; gills adnate, then decurrent, distant, distinct, rather thick, white, not spotted; stem solid, 2–3 in. long, ½ in. thick, glabrous, whitish, constricted at the apex, rough with white points; spores elliptical, 8 × 4 μ.

Hygrophorus pudorinus, Fries, Epicr., p. 322; Cke., Hdbk., p. 290; Cke., Illustr., pl. 911.

In fir woods.

Colour approaching that of *H. erubescens*, but allied to *H. eburneus*. Veil absent. Pileus not pelliculose, sometimes spotted with yellow, as is also the white flesh. (Fries.)

Hygrophorus (Lima.) glutinifer. Fr.

Pileus 2–4 in. across, fleshy at the disc, margin thin, convex then expanded, broadly gibbous, sometimes depressed, disc with minute wrinkles or points, rufescent, whitish towards the margin, with a thick pellicle of gluten; gills slightly decurrent, arcuate, about 2 lines broad, rather thick, white; stem 3–4 in. long, ⅔ in. thick at the widest part, slightly ventricose below the middle, rather elastic, coloured like the pileus or paler upwards, and with white squamules, viscid from the veil, stuffed.

Hygrophorous glutinifer, Fries, Epicr., p. 322; Cke., Illustr., pl. 889; Cke., Hdbk., p. 290.

In woods.

A very fine large species; known among the reddish, viscid species by the ventricose stem and rugosely punctate disc of the pileus.

*** *Tawny or yellow.*

Hygrophorus (Lima.) arbustivus. Fr.

Pileus 1–2 in. across, flesh rather thick, convex then almost plane, obtuse or more or less umbonate, viscid, streaked with fine raised lines, pale tawny; gills adnate with a slight suggestion of becoming decurrent, rather distant, thick, 1½ line broad, firm, white; stem 1½–3 in. long, 3–4 lines thick, equal, naked, elastic, pallid, the apex with free, white, powdery granules, solid; spores elliptical, 10 × 6 μ.

Hygrophorus arbustivus, Fries, Epicr., p. 323; Cke., Hdbk., p. 291; Cke., Illustr., pl. 896A.

In woods under birch, &c.

Differs from all allies in the free (not innate) white granules at the apex of the stem. Stem solid, 1½ in. long, ¼ in. thick, equal, incurved, glabrous, white becoming pallid, polished and more rigid outside, as in *Hygrophorus pratensis*, rather spongy inside, hence elastic. Pileus fleshy, convexo plane, obtuse, 2 in. broad, rather wavy, viscid, virgate with innate fibrils but entirely glabrous, even, opaque tawny-brick-red, becoming paler towards the margin. Gills adnate, scarcely decurrent, distant, distinct, thick, white. Smell and taste not unpleasant. (Fries.)

Hygrophorus (Lima.) aureus. Arrh.

Pileus about 1 in. across, very fleshy at the disc, margin very thin; convex, then almost plane, obtuse, even, glutinous, clear shining golden-yellow; gills slightly decurrent, distant, thin, whitish; stem about 2 in. long and 3 lines thick, nearly or quite equal, glabrous, whitish upwards, reddish-tawny and with an imperfect ring from the glutinous veil, stuffed; spores elliptical, 8 × 4 μ.

Hygrophorous aureus, Arrhen., in Fries, Monogr., ii. p. 127; Cke., Hdbk., p. 291; Cke., Illustr., pl. 896B.

In woods.

Distinguished from all other golden-yellow species by the glutinous pileus and stem. In Cooke's figure the gills are rather deeply decurrent and deep yellow.

Hygrophorus (Lima.) discoideus. Fr.

Pileus 1–2 in. across, flesh thin except at the disc, at first campanulato-convex, then plane and somewhat obtuse, at length with the disc depressed, even, glabrous, very glutinous, yellowish-red then becoming paler, disc always darker and somewhat ferruginous; gills at first adnate and somewhat crowded, then decurrent and distant, thin, soft, yellowish-white; stem stuffed, $1\frac{1}{2}$–2 in. long, 3–5 lines thick, equal or attenuated upwards, very soft, texture fibrous, flocculose, viscid, pallid white, apex spotted with white; spores subglobose, 5–6 × 4–5 or 6–8 × 4 μ.

Hygrophorus discoideus, Fries, Epicr., p. 323; Cke., Hdbk., p. 291; Cke., Illustr., pl. 912.

Among grass in pine woods, &c.

Gregarious. Fries says that in the late autumn he has met with a form having a clay-coloured pileus with a ferruginous disc, and an elongated stem becoming hollow. Sometimes solitary.

Hygrophorus (Lima.) aromaticus. Sow.

Pileus 2–3 in. across, convex then expanded and almost plane, very fragile, cinnamon-colour, smooth, glutinous; the gluten in drying sometimes contracts and forms raised, anastomosing ribs; disc fleshy, margin thin; gills slightly decurrent, about $1\frac{1}{2}$ line broad, white with a pink tinge; stem $1\frac{1}{2}$–2 in. long, 2–4 lines thick, almost equal, coloured like the pileus, stuffed then hollow. Smell spicy, taste acrid.

Hygrophorus aromaticus, Berk., Outl., p. 198; Cke., Hdbk., p. 291.

Agaricus aromaticus, Sowerby, t. 144.

Among grass.

There is a certain amount of uncertainty about the fungus described above, and called *Agaricus aromaticus* by Sowerby. It is considered by Berkeley to be a species of *Hygrophorus*, hence its appearance here; the characters, judging from Sowerby's figure and description, given below,

appear to be well marked, and if found again, its true position can be settled.

The agreeable spicy odour suggested its name; it appears to be *A. glutinosus* of Bulliard, though his gills are colourless; a name applicable to many of the fungi (and would do for this were it not previously engaged), as it is sometimes altogether a gluten, or jelly. The pileus has generally a thick glutinous skin of a cinnamon colour; the gills are somewhat pinky; they appear to be decurrent in the young state, but when advanced they separate, so as to appear naturally loose and separate from the stipes, which is somewhat hollow and pithy. The whole plant when fresh is often so tender, I have not been able to gather it whole; in bruising it becomes blackish. As the plant dries, the skin corrugates, and often becomes very prettily reticulated (may not this be *A. reticulatus* of Dr. Withering, ed. iii., p. 289?) The taste is watery, with a peppermint-like coolness in the mouth, and a lasting roughness in the throat. (Sowerby.)

**** *Olivaceous umber.*

Hygrophorus (Lima.) limacinus. Fr.

Pileus 1½–2½ in. across, flesh rather thick, firm, white, convex then expanded, obtuse, glabrous, viscid, disc umber then smoke-colour, paler towards the margin; gills adnate, then *decurrent, rather distant, thin, greyish-white*; *stem* solid, firm, 2–3 in. long, ½ in. thick, ventricose, floccculose, fibrillosely striate, apex rough with squamules; spores elliptical, 12 × 8 μ.

Hygrophorus limacinus, Fries, Epicr., p. 324; Cke., Hdbk., p. 292; Cke., Illustr., pl. 897.

In woods.

Intermediate between *H. agathosmus* and *H. olivaceo-albus*; differing from the former in the presence of an evident veil, and from the latter in the squamulose apex of the stem.

Hygrophorus (Lima.) olivaceo-albus. Fr.

Pileus 1–2 in. across, fleshy at the disc, very thin elsewhere, obtusely cylindrical then expanded, umbonate, even, covered with olive gluten that disappears, leaving the pileus

paler, umbo brownish; gills slightly decurrent, about 1½ line broad, rather distant, shining white; stem 2–3 in. long, 2–3 lines thick, equal, often slightly curved, viscid, whitish but spotted and stained with brown from the veil, apex smooth, solid; spores elliptical, 7–8 × 4 μ.

Hygrophorus olivaceo-albus, Fries. Epicr., p. 324; Cke., Hdbk., p. 292; Cke., Illustr., pl. 890.

Woods and woodland pastures.

Stem solid, about 3 in. long, 3 lines thick, equal or attenuated at the base, fundamental colour-white, but spotted with squamules from the adnate sheathing brown veil, viscid; the veil terminates in a ring near the apex, above which the stem is smooth and shining white. Pileus fleshy, at first cylindrico-globose, then expanded, umbonate, becoming depressed round the umbo, altogether even, glabrous, glutinous, 1–2 in. broad, olive-brown, becoming pale, especially towards the margin, which is naked from the first, and somewhat striate when old. Flesh thin, white, gills decurrent, distant, broad, simple, connected by veins at the base, always shining white. (Fries.)

Hygrophorus (Lima.) hypothejus. Fr.

Pileus 1–2½ in. across, convex then depressed, sometimes almost infundibuliform, even, slightly virgate, greyish-olive, at first covered with olive mucus, paler and yellowish-olive or brownish after the gluten has disappeared; flesh thin, tinged yellowish; gills decurrent, about 1½ line broad, distant, distinct, whitish then with a yellow or yellow-pink tinge; stem 2–4 in. long, 3–5 lines thick, almost or quite equal, viscid, paler than the pileus, stuffed then hollow, veil evident at first in the form of an imperfect ring, but soon disappearing; spores broadly elliptical, 8–10 × 4–5 μ.

Hygrophorus hypothejus, Fries. Epicr., p. 324; Cke., Hdbk., p. 292; Cke., Illustr., pl. 891.

In pine woods, among heather, &c.

Distinguished by the glutinous pileus and stem and the yellowish-olive colour. Usually appears late in the season. *H. olivaceo-albus* differs in the persistent shining-white gills.

Hygrophorus (Lima.) cerasinus. Berk.

Smell strong, resembling the cherry-laurel. Pileus about 1½ in. across, flesh very thick at the disc, tapering gradually to the margin; convex, broadly and obtusely umbonate, even, viscid, pale umber then greyish, margin downy; gills slightly decurrent, about 1 line broad, very distant, sometimes forked, white with a pink tinge; stem 2–3 in. long, 3–4 lines thick, usually very slightly ventricose below the middle, base narrowed rather abruptly, white, with minute wart-like squamules near the apex, solid; spores elliptical, 8 × 4 μ.

Hygrophorus cerasinus, Berk., Outl., p. 197; Cke., Hdbk., p. 292; Cke., Illustr., pl. 897.

In fir plantations, &c.

Distinguished by the peculiar smell and the attenuated base of the stem.

***** *Dingy grey or livid.*

Hygrophorus (Lima.) fusco-albus. Lasch.

Pileus about 2 in. across, fleshy at the disc, margin thin; convex then plane, even, glabrous, viscid, brownish then grey, margin paler; gills slightly decurrent, 2 lines broad, rather thick, snow-white; stem 2–3 in. long, 4–6 lines thick, equal, dry, whitish, with white flocculent tufts at the apex, solid; spores elliptical, apiculate, 12–14 × 7–8 μ.

Hygrophorus fusco-albus, Cke., Hdbk., p. 293; Cke., Illustr., pl. 899.

Agaricus fusco-albus, Lasch., no. 502.

In woods.

Hygrophorus (Lima.) agathosmus. Fr.

Pileus 1½–3 in. across, fleshy, convex then plane, gibbous, viscid, livid-grey everywhere, covered with minute, crowded, viscid, pellucid, whitish points, margin at first incurved and downy, soon spreading, naked, and wavy; flesh soft, watery, whitish; gills decurrent, distant, soft, 3–4 lines broad, quite entire, somewhat veined at the base, white; stem solid, firm, at length very soft and often hollow, 2–3 in. long, ¼–½ in. thick, somewhat fibrillosely striate, not viscid, with white spot-like squamules above, at length becoming greyish, rough, almost mealy; partial veil not evident; spores elliptical, smooth, 9–10 × 5 μ.

Hygrophorus agathosmus. Fries, Monogr., ii. p. 9; Cke., Hdbk., p. 293; Cke., Illustr., pl. 913.

In pine woods, &c.

Smell, especially when old, pleasant, resembling aniseed. In luxurious specimens the pileus is much larger than indicated above, and flexuous, the stem is also sometimes curved or flexuous. Larger and firmer than *L. pustulatus*. (Fries.)

Hygrophorus (Lima.) mesotephrus. B. & Br.

Pileus 1–1½ in. across, flesh rather thick at the disc, thin elsewhere, somewhat hemispherical, white with a brown *disc, viscid, striate; gills decurrent, pure white, rather* distant; stem 1½–2 in. long, slender, flexuous, attenuated towards the base, viscid, whitish, granular at the apex; spores elliptical, apiculate, 9–10 × 5 μ.

Hygrophorus mesotephrus, B. and Br., Ann. Nat. Hist., xiii. t. 15, f. 2; Cke., Hdbk., p. 293; Cke., Illustr., pl. 914.

In woods.

Pileus about 1 in. across, convex, subhemispherical, white with the disc brown, viscid, striate, the extreme margin often remaining quite even, flesh white, hygrophanous. Stem about 2 in. high, 2 lines thick, flexuous, attenuated at the base, white, viscid, floccoso-granulated at the apex, stuffed with a fibrillose pith. Gills pure white, moderately broad, rather distant, ventricose, shortly decurrent. A very delicate species, allied to *H. fusco-albus*, but with a very different habit. In age the lower part of the stem is slightly stained, but by no means squamose. (B. and Br.)

Cooke's figures, quoted above, differ much from Berkeley's description and figures. In Cooke's "Illustrations" the pileus is pale yellowish buff, disc darker, plane, umbonate, and depressed round the umbo; altogether suggesting a slender, pale form of *H. pratensis*.

Hygrophorus (Lima.) livido-albus. Fr.

Pileus 1½–2½ in. across, flesh everywhere thin; expanded, obtuse, more or less irregularly waved, even, glabrous, viscid, livid, all one tint, margin naked; gills decurrent, distant, 1–1½ line broad, distinct, clear white; stem 2–3 in. long, about 2 lines thick, nearly equal, often more or less flexuous, stuffed, whitish, glabrous; spores elliptical with an oblique apiculus, 10 × 6 μ.

Hygrophorus livido-albus. Fries, Epicr., p. 324; Cke., Illustr., pl. 915; Cke., Hdbk., p. 293.

In woods.

Somewhat resembling *H. eburneus* in habit and size, but distinguished by the livid colour of the pileus and the glabrous stem.

PLEUROTUS. Fries. (figs. 12, 13, p. 301.)

Pileus excentric, fleshy or membranaceous, sometimes resupinate; gills usually decurrent, sometimes determinate behind, or not running down the stem, rarely abruptly adnate, margin acute; stem expanding gradually into the flesh of the pileus, excentric, truly lateral, or absent; veil present in some species; spore more or less elliptical, smooth.

Pleurotus, Fries, Epicr., p. 129; Cke., Hdbk., p. 101.

The principal feature of the genus is the excentric or lateral stem. Most species grow on wood, twigs, moss, &c., rarely on the ground. In some of the higher species, *P. corticatus*, *P. ulmarius*, *P. spodoleucus*, &c., the stem is sometimes central, and the pileus regular and horizontal. On the other hand, certain species of *Clitocybe* and *Omphalia* when growing from an oblique or lateral substratum become excentric and oblique. In *Lactarius*, *Cantharellus*, *Marasmius*, and the whole of the other Leucosporae, there is nothing analogous with *Pleurotus*. (Fries.)

ANALYSIS OF THE SPECIES.

I. Excentrici.

Pileus entire, extended laterally, excentric but not truly lateral.

*** Veil forming a ring on the stem.**

**** Veil absent; gills sinuate or obtusely adnate.**

***** Veil absent; gills deeply decurrent; stem distinct, more or less vertical.**

**** Veil absent; gills deeply decurrent; pileus lateral, sessile, or produced behind into a short, oblique, stem-like base.

II. Dimidiati.

Pileus distinctly lateral, not marginate behind; not resupinate at first.

III. Resupinati.

Pileus at first resupinate, then reflexed, sessile; gills radiating from an excentric point.

* Pileus fleshy, uniform in texture.

** Pileus fleshy, striate, upper layer gelatinous, or, covered with a viscid pellicle.

*** Pileus membranaceous, not viscid.

EXCENTRICI.

* *Veil forming a ring.*

Pleurotus corticatus. Fr.

Pileus 4–8 in. across, flesh thick, hard, white, convex then expanded and almost disciform, horizontal, always entire, everywhere covered with a dense greyish down when young, and as the pileus expands the down becomes broken up into floccose squamules on a whitish ground, margin strongly incurved when young; gills very decurrent, anastomosing behind, also dichotomously branched, rather distant, white but becoming yellowish when old; stem 1–3 in. long, up to 1 in. thick, solid, hard, rooting, more or less excentric, curved and ascending, almost equal, squamulosely fibrillose, white; ring cottony-floccose, thick, white, torn into shreds that at first adhere to the stem and margin of pileus, but finally disappear.

Agaricus (Pleurotus) corticatus, Fries, Epicr., p. 129; Cke., Hdbk., p. 101; Cke., Illustr., pl. 290.

On trunks.

Often large and showy, usually solitary, but sometimes truly caespitose. The presence of a ring, and the deeply decurrent gills anastomosing behind stamp the present species.

A large and noble Agaric, perhaps too closely allied to *P. dryinus.* Pileus excentric, 7 in. across, expanded, swollen in the centre; disc, especially in the centre, broken up into brownish-grey silky scales, which are more minute towards the thin, strongly involute margin. Stem 3 in. high, 1½ in. thick, pitted and silky below the evanescent ring, firm and tough, mottled. Gills rather broad, pure white, very decurrent, anastomosing behind, sometimes forked; edge entire. Smell rather strong. (B. and Br.)

Pleurotus dryinus. Pers.

Pileus 2–4 in. across, flesh thick at the vertex, becoming thin at the margin, white, becoming yellowish when broken; oblique or sometimes almost circular, compact and hard, whitish, variegated with innate, brownish scales, margin incurved and bearing fragments of the torn veil; stem very excentric, but not truly lateral, rarely almost central, about 1 in. long, ½ in. thick or even more, whitish; gills decurrent narrow, almost simple, not anastomosing, white, becoming tinged with primrose yellow when bruised; spores elliptical, 10 × 4 μ.

Agaricus (Pleurotus) dryinus, Cke., Hdbk., p. 102; Cke., Illustr., pl. 226.

Agaricus dryinus, Persoon, Syn., p. 478.

On trunks of oak, hornbeam, &c.

Small, hard, stem short, oblique, but not truly lateral, the pileus being marginate behind.

Pileus ¾–3 in. broad, excentric, white, the surface broken into light brown adpressed scales, the margin involute, with fragments of the broad woven veil adhering to it, flesh continued into the stem. Gills white, not very broad, decurrent, forked, crisp. Sporules white. Stem 3 in. high (in my specimen elongated from growing in a hollow ash), attenuated downwards, firm, almost woody, tomentose but not scaly. Taste like that of *A. campestris.* The plant assumes partially a yellowish tint when dry or cut. (Berk.)

Pleurotus spongiosus. Fr.

Pileus 2-3 in. across, fleshy, excentric, somewhat lateral, pulvinate, covered with a persistent grey down; flesh loosely floccose, white; gills sinuately adnexed, with a decurrent tooth, simple, distinct, crowded, white, margin quite entire; stem up to 1 in. long, sometimes almost wanting, excentric, incurved, not rooting, white, tomentose; ring white, soon torn, adhering to the margin of the pileus, at length disappearing; spores 8-10 × 4 μ.

Agaricus (Pleurotus) spongiosus, Fries, Epicr., p. 130; Cke., Hdbk., p. 102; Cke., Illustr., pl. 253.

On trunks of beech, &c., among moss.

Distinguished by the presence of a veil and sinuately adnexed gills.

** *Gills sinuate or obtusely adnate.*

Pleurotus ulmarius. Bull.

Pileus 3-7 in. across, fleshy, compact, horizontal, fairly regular but more or less excentric, convex then plane and disciform, even, glabrous, livid becoming pale, but elegantly marbled with roundish spots; flesh white, tough; gills horizontal, emarginate and rounded behind, slightly adnexed, broad, rather crowded, whitish; stem solid, firm, elastic, somewhat excentric, curved and ascending, 2-3 in. long, up to 1 in. thick, base thickened and tomentose, not unfrequently tomentose everywhere, white.

Agaricus ulmarius, Bull., Champ., t. 510; Cke., Hdbk., p. 102; Cke., Illustr., pl. 227.

On trunks of various trees.

Usually solitary; often very large and robust. When the fungus grows vertically from the side of a trunk, the stem is more or less excentric and ascending; when growing horizontally, the stem is central and erect, when it resembles a *Tricholoma*, but distinguished by growing on wood. (Fries.)

In Cooke's figures the pileus and stem are pale ochraceous.

Pileus 3-12 in. broad, obtuse smooth, subcoriaceous, but within very white, soft yet compact, thick, sometimes marbled with livid spots. Gills numerous, broad, white, adnate or subdecurrent, irregular. Stem excentric, ascending, 2-3 in.

long, about 1 in. thick, solid, firm, incrassated at the base, white sometimes furfuraceous, single or in tufts, varying a good deal in its texture. (Grev.)

Pleurotus tessulatus. Bull.

Pileus 3–4 in. across, horizontal, flesh compact, thick, white, convex then plane, and in somewhat lateral forms depressed behind, rather irregular, even, glabrous, not cracked in a tessulated manner, but marked with roundish or polygonal, paler spots, pallid-tawny; gills sinuate behind, uncinately adnexed, thin, crowded, white or becoming tinged yellow; stem solid, compact, about 1 in. long, equal, or attenuated at the base, very excentric, curved ascending, even, glabrous, white.

Agaricus (Pleurotus) tessulatus, Bull., t. 513, f. 1; Cke., Hdbk., p. 102; Cke., Illustr., pl. 254.

On trunks.

Solitary or caespitose. Allied to *P. ulmarius*, but more irregular in form, smaller, more compact, and smell of new meal.

Pleurotus subpalmatus. Fr.

Pileus 3–5 in. across, flesh thick, soft, variegated; convex then more or less flattened, irregularly circular, obtuse, rugulose, smooth, with a gelatinous cuticle, rufescent; stem excentric or almost lateral, but the pileus is always marginate behind, fibrillose, short, equal, flesh fibrous, soft; gills adnate, 3–4 lines broad, crowded, joined behind, dingy.

Agaricus (Pleurotus) subpalmatus, Fries, Epicr., p. 131; Cke., Hdbk., p. 103; Cke., Illustr., pl. 255.

On old trunks, squared timber, &c.

Very remarkable for having the flesh variegated as in *Fistulina hepatica*. Pileus, especially when young, covered with a viscid pellicle. (Fries.)

Pleurotus craspedius. Fr.

Pileus 3–6 in. across, more or less excentric, sometimes almost lateral, but always marginate behind; flesh thin, almost membranaceous at the expanded margin, flaccid, plane, depressed behind when very excentric, brick-red, or after rain tan-colour becoming pale; also greyish, even, glabrous, rather moist, but without a separable pellicle,

margin at first incurved, then expanded, elegantly crenately lobed or fimbriate; flesh watery, white when dry; gills entirely adnate, not sinuate, very thin, crowded, and narrow, at length torn, white; stem sometimes very short, at others up to 3 in. long and 1 in. thick, solid, firm, elastic, spongy inside, often twisted or compressed, pallid, usually glabrous, or the base slightly downy.

Agaricus (*Pleurotus*) *craspedius*, Fries, Epicr., p. 131; Cke., Illustr., pl. 256; Cke., Hdbk., p. 103.

On rotten trunks.

Distinguished by the very narrow, thin, crowded gills being truly adnate, and not at all emarginate behind.

Pleurotus fimbriatus. Bolton.

Pileus 2–3 in. across, flesh quite thin; more or less plane then depressed, the margin becoming variously broken up into lobes and crenated, even, whitish, hygrophanous and almost hyaline; stem more or less excentric, about 1 in. long, 2–3 lines thick, firm, compressed, downy, not rooting; gills adnate, thin, narrow, much crowded, sometimes forked, white.

Agaricus (*Pleurotus*) *fimbriatus*, Cke., Hdbk., p. 103; Cke., Illustr., pl. 178A.

Agaricus fimbriatus, Bolton, t. 61.

On trunks.

A remarkable species, allied to *Pleurotus lignatilis*. Pileus and stem downy when young, but naked when old, in the specimens found by me. (Fries.)

Gregarious or tufted. Pileus 3 in. broad; most beautifully and repeatedly lobed and fimbriated; turning pale. Stem about 1 in. long, smooth. (Berk.)

Pleurotus Ruthae. B. & Br.

Pileus 1½–3 in. across, flesh thickish; more or less fan-shaped, upper stratum gelatinous, rather hispid, whitish or yellowish-buff, even, margin very thin, often striate; gills determinate and anastomosing behind, about 1½ line broad, white then reddish, interstices veined; stem either distinctly lateral, or the pileus marginate behind, short, rather stout, reddish, hispid.

Agaricus (*Pleurotus*) *ruthae*, Berk. and Broome, Ann. Nat.

Hist., no. 1754; Cke., Hdbk., p. 103; Cke., Illustr., pl. 178B, and 654.

On sawdust.

Distinguished from *P. pantoleucus* by the gills being determinate (ending definitely and not decurrent), and anastomosing behind.

Pleurotus lignatilis. Fr.

Pileus 2–6 in. across, rarely central, usually more or less excentric, sometimes quite lateral, often reniform, flesh thin but compact and tough, cracking, convex then plane, obtuse and often umbilicate, flocculosely mealy, becoming naked after rain, wavy, margin at first involute, then expanded, undulately lobed in luxuriant specimens, dingy white; gills adnate, much crowded, narrow, unequal, diverging in the lobes, white; stem stuffed then hollow, sometimes 2–3 in. long, sometimes only 3–4 lines long, or almost absent, always slender, unequal, curved or flexuous, tough and flexible, whitish, villosely pruinose everywhere, base rooting and rather downy.

Agaricus (Pleurotus) lignatilis, Fries, Epicr., p. 132; Cke., Hdbk., p. 104; Cke., Illustr., pl. 257B.

On trunks, rotten wood, &c.

Very variable, form altogether inconstant, substance thin, tough, smell strong of meal, dingy whitish; usually densely caespitose, but also solitary. (Fries.)

Pleurotus circinatus. Fr.

Entirely white. Pileus about 3 in. across, orbicular, horizontal, flesh rather thick, pliant, convex then flattened and more or less discoid, even, but covered with a whitish silkiness; gills slightly decurrent, crowded, up to 3 lines broad; stem 1–2 in. long, 3–4 lines thick, equal, central or slightly excentric, commonly straight, glabrous, base rooting, stuffed; elastic.

Agaricus (Pleurotus) circinatus, Fries, Epicr., p. 132; Cke., Hdbk., p. 104; Cke., Illustr., pl. 257B.

On rotten wood of birch, &c.

Regular, solitary, entirely white, not hygrophanous, odour weak but pleasant. Appears to approach *Agaricus (Clitocybe) rivulosus*, from which it is distinguished by its habitat. (Fries.)

*** *Gills decurrent; stem almost vertical.*

Pleurotus pantoleucus. Fr.

Entirely white. Pileus 2–3 in. across, excentric, spathuliform or somewhat elliptical, even, glabrous, marginate and depressed behind, margin even, entire; flesh thick behind, thin at the margin, white; gills decurrent; 3 lines broad, crowded, not forked nor anastomosing behind; stem not 1 in. long, 3–4 lines thick, ascending, glabrous, solid, not rooting; spores elliptic fusiform, smooth, 11–12 × 4 μ.

Agaricus (*Pleurotus*) *pantoleucus*, Fries, Hym. Eur., p. 172; Cke., Hdbk., p. 104; Cke., Illustr., pl. 179 and 275A.

On trunks.

Solitary, firm, white, stem solid, ascending, very excentric, 1 in. or a little more in length, ½ in. or more thick, equal or narrowed downwards, even, glabrous; pileus fleshy, ascending, obliquely horizontal, spathulate and slightly convex, up to 3 in. long, and 2 in. broad, even, glabrous, disc often opaque, margin quite entire. Gills decurrent, rather crowded, white. (Fries.)

Owing to the slightly pronounced characters, this species was at one time considered as a sub-species of *P. spodoleucus*, but the constant white colour, short, ascending stem, thinner towards the base, and somewhat lateral pileus, depressed behind, distinguish it. In one of Cooke's figures (pl. 179), the pileus is of a pale warm ochraceous colour, the gills also are pallid. There is a suggestion of these tints in the fig. by Fries, Icones, pl. 88, f. 2.

Pleurotus sapidus. Kalchbr.

Caespitose, or several pilei appearing to spring from a common branced stem; pileus 1–3 in. across, flesh thick, excentric, irregular, convex or obtusely gibbous then depressed, glabrous, white or brownish; stem stout, solid, several usually springing from a thickened knob, whitish, 1–2 in. long, expanding upwards into the pileus; gills decurrent, rather distant, narrow, whitish; spores elliptical, 10–11 × 4–5 μ.

Pleurotus sapidus, Kalchbrenner, Hym. Hung., t. 8, f. 1; Cke., Hdbk., p. 371; Cke., Illustr., pl. 954.

On elm trunks.

cies; according to Kalchbrenner, the
nge of lilac, and the pileus is white,
uber on the same trunk. The white
t with in this country.

is. Fr.

cross, flesh rather thick, soft, irregu-
ne and slightly depressed, but very
ous, silky when dry, white; gills de-
owded, narrow, rather thick, simple;
slender, expanding upwards into the
ntric or almost lateral, glabrous, base

mutilus, Fries, Syst. Myc., i, p. 191;
ke., Illustr., pl. 275B.
ng grass. Cooke says, also on dead

talia scyphoides, Fr.; of which it may
but although the two have grown
e never observed a direct transition.
ng almost glabrous, never regular in
uniform. (Fries.)

nt: stem lateral, short or absent.

tus. Jacq.
fleshy, soft, at first convex and hori-
and ascending, glabrous, moist, even,
mes torn into squamules, dark and
young, then brownish-grey, clear
t tinge, or lavender colour, often
hen old: stem short or obliterated,
ng, incrassated upwards, white, base
lls decurrent, anastomosing behind,
white, sometimes tinged yellow, never
al, white, 10–12 × 4–5 μ.
cques., Austr., t. 268; Cke., Hdbk.,
l. 195 and 953.
Quelet, in Bresad., Fungi Trident.,

plane; flesh thick at the disc, becoming thin elsewhere, white; silkily downy, shining white; stem very excentric, almost lateral, slender or almost obsolete, downy; gills decurrent, very much crowded, thin, white then yellowish.

Agaricus (Pleurotus) acerinus, Fries, Epicr., p. 134; Cke., Hdbk., p. 106; Cke., Illustr., pl. 291?

On trunk.

Caespitose or solitary; not hygrophanous. Cooke's figure differs from the description given by Fries in having the pileus tinged with brown, and the stem robust, 1 in. long, and above ½ in. thick.

II. DIMIDIATI.

Pleurotus petaloides. Bull.

Pileus 1–2 in. long, flesh thin; ascending, somewhat obovate or spathulate, almost plane, depressed behind and running into the stem where it is downy, remainder glabrous, brownish, becoming pale, margin at first involute, then expanded; gills decurrent, very much crowded, about 1 line broad, linear, and very unequal, whitish then grey; stem solid, firm, about ½ in. long, sometimes very short, compressed, more or less downy, exactly lateral, whitish; spores 9–10 × 4 μ.

Agaricus (Pleurotus) petaloides, Cke., Hdbk., p. 106; Cke., Illustr., pl. 258A.

Agaricus petaloides, Bull., Champ., 226, f. 2.

On trunks.

Gregarious or imbricated, pileus entire, stem channelled in large specimens; colour of pileus various; taste bitter. Fries mentions a form growing on the ground in grassy places, having the pileus somewhat vertical, margin reflexed, small, almost indicating a transition to *P. tremulus*.

Pleurotus serotinus. Schrad.

Pileus 1–3 in. broad, flesh thick, at first convex and gibbous, then plane and ascending, reniform or obovate, even, glabrous, covered with a viscid pellicle in wet weather, yellowish-green, sooty-olive, &c.; margin at first involute, then expanded and rather wavy; gills not truly decurrent,

n branched, typically yellow, but
nkish, the margin with sooty points
of the squamules of the stem; stem
. long, often short or almost absent,
ish, with scattered sooty squamules
e near the gills.
rader, Abbild. d. Schwämm, 3; Cke.,
lustr., pl. 258B.

ately caespitose, very fleshy, compact
r.

narius. Fr.
g by 1 in. or more broad, flesh thin,
ovate or reniform, glabrous, greyish
lightly decurrent, narrow, simple,
m lateral, round, very short, downy.
pulmonarius, Syst. Myc., p. 187; Cke.,

m *P. serotinus* in the very short stem

s, Monogr., i. p. 248.
the typical form, gregarious; pileus
to a very short stem-like base, not
cid, glabrous, greyish-brown; gills
the pileus or paler.

Pers.
flesh thin, tough, white; horizontal,
us, without a viscid pellicle, whitish
inge; gills adnato-decurrent, closely
le, white; stem distinctly lateral, up
very short, compressed and broadened
h white squamules; spores elliptical,
μ.
mitis, Cke., Hdbk., p. 107; Cke.,

m, Syn. p. 481.
f pine, larch, &c.

Resembling *Panus stypticus* in habit and size, but distinguished by its white colour and glabrous pileus.

Firm, tasteless, white or rufescent, in the young state spathulate, and the stem quite distinct, the pileus gradually dilates, the stem becomes obsolete, and the pileus reniform, the outer margins meeting, and the one overlapping the other: the upper stratum gelatinous. (Berk.)

Pleurotus gadinoides. Smith. (figs. 12, 13, p. 301.)

Pileus about ½ in. across, rather fleshy tender, horizontal, semi-circular or shell-shaped, white, hygrophanous, covered with delicate adpressed, floccose down, with no gelatinous upper stratum; stem minute, lateral, or absent: gills somewhat crowded, and slightly branched; white: spores elliptical, 7 × 3 μ.

Agaricus (*Pleurotus*) *gadinoides*, W. G. Smith, Journ. Bot., 1873, t. 129, f. 1–4; Cke., Hdbk., p. 107; Cke., Illustr., pl. 276A.

On tree-fern stem in hot-house.

Probably an introduced species.

Pleurotus limpidus. Fr.

Pileus ½–1 in. across, flesh thin, obovate or reniform, horizontal, even, glabrous, hygrophanous, white when moist, shining white when dry, not furnished with a viscid pellicle, margin very thin, shortly inflexed; gills thin, crowded, white; true stem absent, but the pileus narrowed behind into a very short, stem-like base, on which the gills are decurrent.

Agaricus (*Pleurotus*) *limpidus*, Fries, Epicr., p. 135; Cke., Hdbk., p. 107; Cke., Illustr., pl. 276B.

On rotten trunks of beech, &c.

With the habit and substance of *P. mitis*, but entirely shining white, and subsessile. (Fries.)

Pleurotus reniformis. Fr.

Pileus ¼–⅜ in. across, rather fleshy, horizontal, reniform, grey, rather notched behind, and furnished with a very short, rudimentary, downy stem; gills diverging from the stem-like base, thin, narrow, crowded, grey.

Agaricus (*Pleurotus*) *reniformis*, Fries, Vet. Akad. Förh., 1873, p. 5; Cke., Hdbk., p. 108; Cke., Illustr., pl. 276C.

On branches.

Stem reduced to a white downy tubercle; flesh of pileus thin, pileus exactly lateral, semicircular, horizontal, plane, even, downy, grey, 4–5 lines broad; flesh very thin, rather gelatinous, diaphanous. (Fries.)

Pleurotus lauro cerasi. B. and Br.

Pileus up to 1½ in. across, flesh thin, equal, sessile, horizontal and attached by a narrow base, more or less circular in outline, or shell-shaped, sulcate, brownish; gills very broad at the middle, narrowed to both ends, rather thin, connected by veins, whitish, margin wavy; spores elliptical, apiculate, 8 × 5 μ.

Agaricus (Pleurotus) lauro-cerasi, B. and Br., Ann. Nat. Hist., no. 1854; Cke., Hdbk., p. 108; Cke., Illustr., pl. 242A.

On stems of cherry laurel.

Pileus rather more than 1 in. across; the cuticle is extremely thin, and gives way at the furrows, so as to expose the substance of the pileus. (B. & Br.)

Pleurotus tremulus. Fr.

Pileus about ½ in. across, flesh thin, dimidiate, somewhat horizontal, reniform, plane, depressed and often villous behind, the remainder glabrous, even, greyish-brown becoming pale, hygrophanous; gills adnate, appearing decurrent from the depression of the pileus, determinate, narrow, rather distant, very unequal, grey; stem distinct, exactly lateral, vertical or slightly ascending, round, about ½ in. long, about two lines thick, sometimes very short, dilated upwards, attached by the fibrillose base to mosses.

Agaricus (Pleurotus) tremulus, Fries, Epicr., p. 135; Cke., Hdbk., p. 108; Cke., Illustr., pl. 242B.

On mosses and on the ground.

More variable than neighbouring species. Entire fungus grey. (Fries.)

Distinguished from *P. tremulus* by the presence of a distinct stem.

Pleurotus acerosus. Fr.

Pileus up to 1 in. across, almost membranaceous, reniform or almost orbicular, plane, somewhat lobed, striate, hygrophanous, greyish, when dry with a white silkiness; stem

lateral, very short or almost obsolete, rather coarsely downy at the base; gills determinate, narrow, crowded, simple, greyish.

Agaricus (Pleurotus) acerosus, Fries, Syst. Myc., i. p. 191; Cke., Hdbk., p. 108; Cke., Illustr., pl. 242c.

On wood, among leaves, on gravel, &c.

Very variable, flaccid, greyish-brown, becoming pale, resembling *Cantharellus lobatus* in appearance. Attached by spreading white mycelium when growing on *Sphagnum* in swamps. (Fries.)

III. RESUPINATI.

* *Pileus fleshy, uniform in texture.*

Pleurotus porrigens. Pers.

Entirely white. Pileus 2–3 in. long, and about 1½ in. broad; flesh thin, tough; sessile, at first resupinate then ascending or horizontal, expanded from the base and becoming ear-shaped, fan-shaped, or almost circular, glabrous, more or less downy towards the base; gills radiating, very narrow, rather crowded.

Agaricus (Pleurotus) porrigens, Cke., Hdbk., p. 109; Cke., Illustr., pl. 259A.

Agaricus porrigens, Persoon, Obs. Myc., i. p. 54.

On old pine trunks.

Usually imbricated. Resembling *P. petaloides* in habit, but differing in colour, and in the absence of a narrowed stem-like base.

Pleurotus septicus. Fr.

Pileus up to ½ in. across, flesh rather thick; downy, resupinate at first and closely applied to the wood on which it grows, furnished with a minute, downy stem 1–2 lines long, which soon disappears, leaving the pileus reflexed, and apparently sessile, shining white; gills radiating from the point of attachment of the stem, rather distant and broad, white; spores broadly elliptical with an oblique basal apiculus, 8–10 and 6 μ.

Pleurotus septicus, Fries, Syst. Myc., i. p. 192; Cke., Hdbk., p. 109; Cke., Illustr., pl. 259.

On wood, branches, twigs, decaying fungi, dung, &c.

Small, but very variable in form. Superficially resembling *Claudopus variabilis*, but the gills are persistently white, as are also the spores.

Distinguished from the other small white species of *Pleurotus* by the thicker flesh of the pileus, and more evident stem, and by the gills being at first uppermost, and then turned over.

** *Pileus fleshy, striate, upper layer gelatinous.*

Pleurotus mastrucatus. Fr.

Pileus up to 2 in. long and 1 in. broad, sessile, at first resupinate then expanded and horizontal, often lobed, upper stratum of pileus gelatinous, brown, bristling with squarrose or erect squamules; flesh thickish; gills radiating from the point of attachment, broad, rather distant, greyish white.

Agaricus (Pleurotus) mastrucatus, Fries, Syst. Myc., i. p. 190; Cke., Hdbk., p. 109; Cke., Illustr., pl. 245A.

On old trunks.

Imbricated. Readily distinguished by the brown, squarrosely scaly pileus.

Pleurotus atrocœruleus. Fr.

Pileus 1–2 in. long, up to 1 in. broad, at first resupinate, soon distinctly reflexed and horizontal, obovate or reniform, downy, rarely almost glabrous, rugulose when dry due to contraction of the cuticle, usually blackish blue, rarely fuscous; flesh soft, superior stratum (pellicle) slightly gelatinous, up to 2 lines thick, blackish-brown; lower layer, or flesh proper, thin and whitish; gills at first radiating from a point, then converging towards the base, broad, whitish, at length tinged with yellow; spores 7–8 × 5 μ.

Agaricus (Pleurotus) atrocoeruleus, Fries, Epicr., p. 137; Cke., Illustr., pl. 243B.

On rotten trunks of beech and poplar, in densely shaded places.

Sessile, gregarious, somewhat imbricated. Smell very pleasant. (Fries.)

Pleurotus Leightoni. Berk.

Pileus about ½ in. across, flesh rather thick, at first obliquely conical, umber then lead-colour, scurfy with short black bristles intermixed; upper layer gelatinous; gills radiating from the point of attachment of the pileus, rather thick, distant, tan-colour, somewhat forked at the base, rather wavy.

Agaricus (*Pleurotus*) *Leightoni*, Berk., Ann. Nat. Hist., vol. xiii., t. 9, f. 1; Cke., Illustr., pl. 260A; Cke., Hdbk., p. 109.

On wood.

Pileus 5 lines broad, at first cyphellaeform, obliquely conical, umber-brown, gradually becoming paler, at length of a pallid lead-colour, furfuraceous, especially behind, where there are a few bristles; flesh consisting of two distinct strata, of which the upper is gelatinous, and of the colour of the pileus, the lower white. Stem none. Gills of a pallid tan-colour, thickish, distant, undulated, obscurely wrinkled at the base, but the interstices can scarcely be said to be reticulated. (Berk.)

Pleurotus algidus. Fr.

Pileus about 1 in. across, rather fleshy, at first resupinate, then expanded and horizontal, reniform, covered with a thin viscid pellicle, glabrous, reddish brown; gills radiating from the point of attachment of the pileus, rather broad, crowded, yellowish.

Agaricus (*Pleurotus*) *algidus*, Fries, Syst. Myc., i. p. 190; Cke., Hdbk., p. 110; Cke., Illustr., pl. 260B.

On trunks.

Pileus grey, umber, or reddish-brown; often pruinose when young. Usually caespitose and imbricated.

Pleurotus fluxilis. Fr.

Pileus up to ⅔ in. across, rather fleshy; sessile, reniform and very slightly depressed behind, even, pale umber, gelatinously viscid; gills diverging from the point of attachment of the pileus, distant, few, white, simple.

Agaricus (*Pleurotus*) *fluxilis*, Fries, Syst. Myc., i. p. 189; Cke., Hdbk., 110; Cke., Illustr., pl. 244A.

On mosses growing on trunks, also on sawdust.

Pleurotus cyphellaeformis. Berk.

Pileus up to ¼ in. broad and high, rather fleshy, sessile, cup-shaped, more or less pendulous, upper layer gelatinous, grey, margin paler, sprinkled with a few meal-like scales, very minutely downy, especially at the base; gills narrow, distant, pure white.

Agaricus (Pleurotus) cyphellaeformis, Berk., Mag. Zool. and Bot., i. t. 15, f. 3; Cke., Hdbk., p. 110; Cke., Illustr., pl. 244B.

On dead stems of herbaceous plants.

Gregarious; resembling a *Cyphella* in habit.

Pleurotus applicatus. Batsch.

Up to ¼ in. across, cup-shaped and orbicular when young, usually sessile and fixed by the downy base, rarely furnished with a very short, rudimentary stem; gills radiating from a central point; when adult more or less reflexed, but never truly dimidiate, slightly pruinose when young, glabrous or downy, minutely striate when moist; colour variable blackish-blue, dark or ashy grey; gills scanty, rather thick, broad, distant, paler than the pileus, and margin usually whitish.

Agaricus applicatus, Batsch, f. 125; Cke., Hdbk., p. 111; Cke., Illustr., pl. 224C.

On rotten wood.

Distinguished among the minute species by its dingy colour. Somewhat resembling *P. tremulus*, but known by the absence of a distinct stem.

Pileus 2–4 lines broad, when young cup-shaped, resupinate, slightly fleshy, striate when moist, more or less villous. Gills broad distant radiating, grey, the margin whitish. Stem none. (Berk.)

*** *Pileus membranaceous, not viscid.*

Pleurotus Hobsoni. Berk.

Pileus 2–4 lines across, thin and delicate, reniform or semicircular, horizontal, plane, pale grey, minutely downy; gills rather distant, radiating from the point of attachment of the pileus, pallid.

Agaricus (*Pleurotus*) *Hobsoni*, Berk., Outl., p. 139; Cke., Hdbk., p. 111; Cke., Illustr., pl. 212A.

On stumps, branches, &c.

Differs from *P. applicatus* in being much paler in colour, and horizontal and plane, not cup-shaped.

Pleurotus striatulus. Fr.

Pileus 2–3 lines across, very thin, pale brownish grey, more or less concave, flaccid, glabrous, striate, sessile; gills broad, few, distant, *radiating from an excentric point*, greyish.

Agaricus (*Pleurotus*) *striatulus*, Fries, Syst. Myc., i. p. 193; Cke., Hdbk., p. 111; Cke., Illustr., pl. 212B.

On fallen branches, wood, &c.

Variable in form (*A.*) obconically campanulate, pendulous when growing on the under side of fallen trunks; (*B.*) imbricated, reflexed; on branches of hazel; (*C.*) irregular; on twigs. Becomes contracted when dry and escapes the eye. (Fries.)

Distinguished among the minute grey species by the glabrous, striate pileus.

Pleurotus hypnophilus. Berk.

Pileus 2–4 lines across, very thin, resupinate, flat, white, somewhat reniform, nearly smooth; gills radiating from the point of attachment of the pileus, narrow, distant, simple; spores elliptical, 5 × 3 μ.

Agaricus (*Pleurotus*) *hypnophilus*, Berk., Outl., p. 139; Cke., Illustr., pl. 212C; Cke., Hdbk., p. 111.

On moss, fallen leaves, &c.

Resembling *Claudopus variabilis* closely in size and general appearance, but the spores are white, and the gills do not change colour. Distinguished among the small white species of *Pleurotus* by the glabrous pileus.

Exactly the habit of *A. variabilis*, but the spores are white, and in consequence the gills do not change colour. (Berks.)

Pleurotus chioneus. Pers.

Pileus 2–3 lines across, very thin, partly resupinate, snow-white, downy; stem lateral, very short, downy, at length almost disappearing; gills radiating from an excentric point, rather broad, with intermediate shorter ones, pure white.

Agaricus chioneus, Persoon, Myc. Eur., iii. t. 26, f. 10–11; Cke., Hdbk., p. 111; Cke., Illustr., pl. 212b.

On wood, dung, leaves, &c.

Somewhat resembling *P. septicus*, but smaller, with a less distinct stem, the flesh of the pileus much thinner. Known from *P. hypnophilus* by the distinctly villose or downy pileus.

Pileus 2 lines broad, extremely delicate and fragile, clothed with white down, fixed by a few downy threads, the margin involute. Gills radiating, distant, with sometimes a single smaller one in the interstices. (Berk.)

OMPHALIA. Fries. (figs. 10, 11, p. 301.)

Pileus symmetrical, usually very thin, depressed or infundibuliform; gills truly decurrent; stem distinctly cartilaginous externally, tubular, but the cavity frequently stuffed, especially when young, usually expanding upwards into the flesh of the pileus; spores more or less elliptical, smooth.

Omphalia, Fries, Syst. Myc., i. p. 162; Cke., Hdbk., p. 91.

Agreeing with *Clitocybe* in the decurrent gills, but readily known by the externally polished, cartilaginous stem, and the very thin substance of the pileus. Separated from *Mycena* and *Collybia* by the truly decurrent gills.

The species are with few exceptions small, and many grow on wood, twigs, &c.; none are edible. Smell obsolete, or nearly so, in all the species.

ANALYSIS OF THE SPECIES.

I. Collybiarii.

Pileus dilated from the first, margin incurved.

* *Hydrogrammi.* Usually large, gills narrow, very much crowded.

(In addition to the stem character, the species of this group differ from the *Cyathiformes* section of *Clitocybe*, in the gills being truly decurrent from the first, very much crowded, and arcuate.)

** *Pyxidati.* Medium size; gills slightly distant, narrow, narrowed at both ends.

*** *Umbelliferi.* Gills very distant, broad, usually thick.

II. Mycenarii.

Pileus campanulate at first, margin straight and pressed to the stem.

* *Campanellae.* Gills broad, perfect, unequal.

** *Integrelli.* Gills fold-like, narrow.

I. COLLYBIARII.

* *Hydrogrammi.*

Omphalia hydrogramma. Fr.

Pileus 2–3 in. across, flesh thin, flaccid, deeply umbilicate, very hygrophanous, marginal portion spreading, rather wavy, striate, livid-white, whitish when dry; gills very decurrent, closely crowded, narrow, arcuate, margin quite entire, very unequal, livid-white; stem about 3 in. long and 3 lines thick, distinctly cartilaginous, hollow, glabrous, base rooting, sometimes shorter, round, and straight, often decumbent and caespitose, commonly compressed and undulate, livid, apex naked.

Agaricus (Omphalia) hydrogrammus, Fries, Epicr., p. 120; Cke., Hdbk., p. 92; Cke., Illustr., pl. 239.

Among damp and rotting heaps of leaves, &c.

Subcaespitose, of one colour, livid or whitish-livid, when moist, becoming whitish when dry, and in this state somewhat resembling *C. phyllophila*; the latter differs in the elastic, externally fibrous stem, the plano-depressed, never truly infundibuliform pileus, and the broader, very slightly decurrent gills.

Omphalia detrusa. Fr.

Pileus about 1½ in. across, rather fleshy, convex then more or less expanded and becoming umbilicate, even, glabrous,

indistinctly zoned; gills slightly decurrent, thin, crowded, whitish; stem about 1½ in. long, 2 lines thick, firm, glabrous, dark grey, soon hollow.

Agaricus (Omphalia) detrusus, Fries, Monogr., ii. p. 291.

Agaricus (Omphalia) umbilicatus, Cke., Hdbk., p. 92.

In woods among moss, &c.

With the habit of some species of *Clitocybe*, but readily distinguished by the cartilaginous stem. Stem stuffed when young, then hollow, rather firm, 1–1½ in. long, 2 lines thick, attenuated upwards, even, glabrous, dark grey, almost blackish, base whitish. Pileus slightly fleshy, convex at first, then umbilicate, 1–2 in. broad, even, glabrous (slightly zoned according to the figure), dark grey. Flesh white, gills somewhat horizontal, slightly decurrent with a tooth, about 1 line broad, thin very crowded, whitish.

Agaricus umbilicatus, Schaeffer, t. 207, approaches the present species, but differs in the livid colour of the pileus when moist, and whitish when dry, apex of stem silky, and pileus umbilicate from the first. (Fries.)

Omphalia maura. Fr.

Pileus 1–1½ in. across, submembranaceous, convex, deeply umbilicate, glabrous, hygrophanous, striate when moist, sooty brown; even, shining with a silky gloss, and livid when dry, the umbilicus is very deep, but the remainder of the pileus arched, with the margin drooping; gills very deeply decurrent, narrowed at both ends, arcuate, very closely crowded, shining white; stem 1–2 in. long, scarcely 1 line thick, distinctly cartilaginous, almost horny, rigid, fragile, stuffed at first, sooty black; spores broadly elliptical, 5–6 × 3–4 μ.

Agaricus (Omphalia) maurus, Fries, Syst. Myc., i. p. 168; Cke., Hdbk., p. 92; Cke., Illustr., pl. 287A.

Swampy places, especially where the ground has been burnt; also among grass on lawns.

Superficially resembling *Collybia atrata*, but distinguished by the decurrent, narrow, crowded gills.

Omphalia offuciata. Fr.

Pileus about 1 in. across, flesh thin, convex then plano-depressed, but not deeply umbilicate, even, glabrous, hygrophanous; like the gills at first dark then pale flesh-colour,

becoming pale when old and dry, almost white; gills moderately decurrent, plane, straight, crowded, narrow, coloured like the pileus; stem about 2 in. long, 1–2 lines thick, equal, round when young then flattened, glabrous, reddish, apex slightly mealy, distinctly cartilaginous, hollow.

Agaricus (*Omphalia*) *officiatus*, Fries, Epicr., p. 121; Cke., Hdbk., p. 92; Cke., Illustr., pl. 287B.

In woods, beech especially, among fallen leaves.

The larger form resembles *Collybia dryophila* in habit, the smaller *Tricholoma carneolum*, but distinct from both in the decurrent gills. (Fries.)

** *Pyxidati.*

Omphalia chrysophylla. Fr.

Pileus 1–2½ in. across, somewhat membranaceous, flaccid, deeply umbilicate, limb spreading and somewhat reflexed, flocculose, somewhat squamulose, very hygrophanous, brownish-yellow when moist, hoary tan-colour, or whitish and hoary when dry; gills decurrent, distant, distinct, broad, persistently deep golden-yellow; stem 1–2 in. long, 2 lines thick, tough, soon hollow, equal, rather incurved, base downy, somewhat rooting, golden-egg-yellow, colour persistent; spores elliptical, $8 \times 4\ \mu$.

Agaricus (*Omphalia*) *chrysophyllus*, Fries, Epicr., p. 122; Cke., Hdbk., p. 92; Cke., Illustr., pl. 1152A.

On rotten pine wood, also on old pine sawdust.

Gregarious. Distinguished from *O. Postii*, which the present species rather resembles in colour, in the pileus not being glabrous, broader gills, and in growing on wood.

Omphalia Postii. Fr.

Pileus about 1 in. across, flesh very thin; deeply umbilicate, margin striate, glabrous, orange; gills deeply decurrent, narrow, rather distant, whitish; stem 2–3 in. long, 1–1½ line thick, even, glabrous, yellow, hollow, equal, straight.

Agaricus (*Omphalia*) *Postii*, Fries, Monogr., ii. p. 291; Cke., Hdbk., p. 93; Cke., Illustr., pl. 194A?

In swamps.

It is doubtful whether Cooke's figure is not an orange

form of *O. pyxidata*; it differs in many particulars from the description and figure of Fries, especially in the very flexuous stem, thickened upwards, whereas Fries says the stem is remarkably equal and straight. The pileus is also much lobed in Cooke's figure, and the specimens were found on charcoal beds.

A very elegant species, growing in swamps. The bright orange colour of the glabrous pileus distinguish this from every other species. Stem hollow, 2–3 in. long, 1 line and more thick, remarkably equal, straight, even, glabrous, yellowish. Pileus membranaceous, umbilicate at first then depressed, 1–2 in. and more broad, even, glabrous, convex and striate at the margin. Gills very deeply and truly decurrent, 1 line broad, arcuate, white. (Fries.)

Var. **aurea.** Mass.

Pileus 1–2 in. across, flesh thin; very regular, infundibuliform, smooth, even, margin drooping, bright golden-yellow; gills slightly decurrent, crowded, 1½ line broad, thin, white; stem about 2 in. long, 1½–2 lines thick, equal smooth and polished, coloured like the pileus, hollow, white and tapering at the base; spores elliptical, 7 × 3·5 μ.

On *Sphagnum* in swamps.

Figured by Cke., Illustr., pl. 1152B, as a form of *O. Postii*, but probably a distinct species.

Omphalia pyxidata. Bull.

Pileus ½–1 in. across, membranaceous, umbilicate then infundibuliform, almost glabrous, radiately striate, brick-red or with a rufescent tinge when wet, hygrophanous, whitish and minutely silky under a lens when dry; gills decurrent, rather distant, narrow, flesh-colour then yellowish; sten about 1 in. long, 1 line thick, even, tough, pale rufescent, stuffed then hollow.

Agaricus (Omphalia) pyxidatus, Cke., Illustr., pl. 194B; Cke., Hdbk., p. 93.

Among short grass, &c.

Stem stuffed then hollow, tough, 1 in. long, about 1 line thick, equal, round, glabrous or pruinose, pallid then reddish. Pileus membranaceous, pellucid, umbilicate then infundibuliform, about 1 in. broad, very hygrophanous, glabrous when moist, sometimes the margin only, sometimes the

whole pileus radiately striate, brownish brick-red, or rufous-brown, slightly floccnlose or silky when dry, becoming pale, opaque. Gills decurrent, rather distant, distinct, narrow, but broad in the middle, flesh-colour then yellowish. The entire fungus very much more variable than neighbouring species. (Fries.)

Pileus smooth, disk submembranaceous. Gills decurrent, rather distant, narrower than in any neighbouring species, dirty-white with a rufescent tinge, then of the same colour as the pileus. Stem when young stuffed, then hollow, thickened at the base and there clothed with whitish down, subattenuate upwards. (Fries.)

Omphalia leucophylla. Fr.

Pileus 1–2 in. across, submembranaceous, infundibuliform, almost smooth, not floccose, dark grey, margin reflexed, involute; gills decurrent, rather distant, arcuate, distinct, shining white; stem 1½–2 in. long, about 1 line thick, equal, even, glabrous, grey, stuffed then hollow.

Agaricus (Omphalia) leucophyllus, Fries, in Vet. Ak. Förh., 1851; Cke., Hdbk., p. 93; Cke., Illustr., pl. 288A.

Damp places in woods, &c.

Distinguished from every other species by the persistently white, shining gills.

Omphalia striaepileus. Fr.

Pileus ¾–1¼ in. across, flesh thin, convex then expanded, umbilicate, glabrous, everywhere striate, livid-brown, hygrophanous; gill slightly decurrent, not crowded, whitish; stem about 2 in. long and 1 line thick, glabrous, tough, tinged with brown, hollow.

Agaricus (Omphalia) striaepileus, Fries, Vet. Akad. Förh., 1861, p. 22; Cke., Hdbk., p. 93; Cke., Illustr., pl. 288B.

Among grass in woods, &c.

Stem fistulose, rather firm, tough, up to 2 in. in length, 1 line thick, equal, often flexuous, even, glabrous, becoming brownish. Pileus membranaceous, convex then plane, umbilicate, 1 in. or a little more in breadth, everywhere elegantly striate, glabrous, livid-fuscous, hygrophanous, even and pallid white when dry, not floccose. Gills slightly decurrent, somewhat crowded, 1–1½ line broad, whitish, not becoming grey. (Fries.)

Omphalia telmatiaea. Berk. & Cke. (figs. 10, 11, p. 301.)

Pileus 1–3 in. across, flesh thin, pliant; depressed and soon infundibuliform, margin broadly arched and drooping, dark umber, hygrophanous, pale buff and silky when dry; gills decurrent, rather crowded, thin, about 1 line broad, pallid; stem 1–2 in. long, equal, polished, grey, white and cottony at the base, hollow; spores elliptical with an oblique apiculus, 7 × 4 μ.

Agaricus (*Omphalia*) *telmatiaeus*, Berk. and Cke., Hdbk., p. 93; Cke., Illustr., pl. 240.

Agaricus (*Omphalia*) *affricatus*, Berk. in Cke., Hdbk., ed. i., no. 216 (not of Fries).

Attached to *Sphagnum* in partly dried up swamps.

Readily distinguished by the dark umber pileus when moist, and the bluish-grey stem. The pileus is frequently more or less waved at the drooping margin. The stem is attached to the sphagnum by white cottony mycelium. Gregarious.

Omphilla Nevillae. Berk.

Pileus ½ an in. across, hemispherical, depressed in the centre, rugose, minutely granulated at the disc, striate, brown, pale towards the margin when dry; gills arcuately decurrent, white, interstices and sides veined and rugose; stem 1 in. high, not a line thick, brownish, stuffed, white within, rough with black granules, rather dilated at the base and clothed with villous hairs.

Agaricus (*Omphalia*) *Nevillae*, Berk., Grev., i. p. 89; Cke., Hdbk., p. 101.

On *Sphagnum* in an orchid pot.

Somewhat resembling *O. affricata*, but not infundibuliform, nor variegated with pilose scales, while the gills are white, not cinereous. (Berk.)

Probably an introduced species.

Omphalia sphagnicola. Berk.

Pileus about 1 in. across, flesh very thin; umbilicate then deeply infundibuliform, faintly striate and minutely squamulose, dingy ochraceous; gills decurrent, narrow, rather distant, pale dingy ochraceous; stem 1–2 in. long, up to

1 line thick, slightly wavy, glabrous, coloured like the pileus, hollow; spores elliptical, 6×3 μ.

Agaricus (Omphalia) sphagnicola, Berk., Outl., p. 131; Cke., Hdbk., p. 94; Cke., Illustr., pl. 289A.

On *Sphagnum* in swamps, &c.

Whole plant tough and elastic. Odour scarcely any. Pileus 1–1½ in. broad, funnel-shaped from a very early stage of growth, faintly striate and minutely squamulose, dirty ochraceous, becoming darker in age; moist but not viscid; gills pale, decurrent, narrow, moderately distant, thick so as to present in front a flat edge. Spores white. Stem 1–2 in. long, 1 line thick, hollow, somewhat crooked, smooth, except at first, when it is very minutely squamulose above: in age it is nearly pervious above.—This species agrees in many points with *A. epichysium*, var. *icmadophila*, but its tough and elastic nature is so different, that I cannot but consider it distinct. The pileus is not membranaceous even on the edge, which must separate it from *A. pyxidatus*. (Berk.)

Omphalia philonitis. Lasch.

Pileus ½–¾ in. across, membranaceous, entirely deeply umbilicate, margin erect, not striate, hygrophanous, floccose when dry, smoky-grey; gills deeply decurrent, rather distant, narrow, lanceolate, grey; stem hollow, 1½–2½ in. long, not more than 1 line thick, equal or attenuated upwards, glabrous, grey, base floccose.

Agaricus (Omphalia) philonitis, Lasch, in Fries, Icon., t. 76, f. 1; Cke., Illustr., pl. 289B; Cke., Hdbk., p. 94.

In swamps among *Sphagnum*, and on rotten wood.

Differs from *O. oniscus* and *O. epichysium* in the longer stem, the deeply infundibuliform pileus not having even the margin reflexed, and in appearing in the spring.

The gills are too white in Cooke's figure.

Omphalia oniscus. Fr.

Pileus up to 1 in. across, almost membranaceous, flaccid, fragile when old, convex with an umbilicus, or infundibuliform, often irregular, undulato-flexuous, glabrous, dark-grey, paler when dry, even, hoary-grey; gills decurrent, rather distant, grey, darker when dry; stem stuffed, then hollow, rather firm but tough, about 1 in. long, 1 line or

more thick, round and curved, or compressed and ascending, undulate, grey.

Agaricus (Omphalia) oniscus, Fries, Epicr., p. 123; Cke., Hdbk., p. 94; Cke., Illustr., pl. 209A.

Among damp mosses, &c.

Distinguished by the grey colour of every part. Allied to *O. pyxidata*; the latter, however, differs in the yellowish-brown colour. *O. rustica* differs in the shorter stem, and *O. striaepileus* in the longer, slender stem.

Omphalia caespitosa. Bolton.

Pileus about $\frac{3}{4}$ in. across, flesh thin, almost hemispherical, umbilicate, sulcate almost to the centre, margin crenate, smooth, pale ochraceous-white; gills shortly decurrent, distant, rather broad, whitish; stem $\frac{1}{2}$–$\frac{3}{4}$ in. long, nearly 1 line thick, almost equal, slightly bulbous at the base, coloured like the pileus, hollow.

Agaricus caespitosus, Bolton, t. 41; Cke., Hdbk., p. 94; Cke., Illustr., pl. 209B.

On banks.

This species has been confounded with *O. oniscus*, Fr., both in the "Handbook," ed. i., and by Fries himself. It is exactly the plant figured in the English edition of Bolton, but the German reprint is coloured quite differently. The colour is entirely of a delicate ochraceous-white. (Cooke.)

Omphalia glaucophylla. Lasch.

Pileus up to $\frac{1}{2}$ in. across, membranaceous, infundibuliform, plicately striate, almost glabrous, mouse-colour, hygrophanous, becoming pale and almost even when dry; gills decurrent, rather distant, lanceolate, olive; stem stuffed, firm.

Agaricus (Omphalia) glaucophyllus, Lasch, no. 217; Cke., Hdbk., p. 94.

On the ground in woods.

A small, and apparently distinct species, but comparatively rare and imperfectly described.

Omphalia rustica. Fr.

Pileus 3–6 lines across, membranaceous, slightly convex, umbilicate, glabrous, striate, hygrophanous, nearly even, and slightly silky when dry, greyish-brown; gills decurrent, rather thick, equally narrowed at each end, grey, margin

arched; stem up to 1 in. long, about ½ line thick, equal or thickened upwards, grey or brown, polished.

Agaricus (*Omphalia*) *rusticus*, Fries, Epicr., p. 126; Cke., Hdbk., p. 95.

On the ground.

Somewhat resembling *O. umbellifera*, but distinguished by the gills being narrowed behind.

On sterile heaths and damp uncultivated places. Stem stuffed, short, ½ in. long, rarely more, ½ line thick, equal or slightly incrassated upwards and also often hollow, polished glabrous, brown then grey, base rather downy; pileus membranaceous, disc always truly and broadly umbilicate, the rest distinctly arched, up to ½ in. across, striate when moist, brown then grey, even when dry; in some forms glabrous and becoming brownish, in others somewhat silky and hoary; in the first form, which appears to be the young stage, the gills are adnate and brownish, slightly, and in the second form deeply decurrent, rather distant in both, arcuate, broadest in the middle. Quite distinct from *O. umbellifera*. (Fries.)

*** *Umbelliferi.*

Omphalia hepatica. Batsch.

Pileus ½–1 in. across, almost membranaceous, tough, rigid, convex and umbilicate, then infundibuliform, even, glabrous, rufous flesh-colour, yellowish-tan and somewhat shining when dry; gills decurrent, distant, narrow, forked, rather thick, pallid; stem about 1 in. long, 1 line thick, very tough and often compressed, brownish flesh-colour, hollow.

Agaricus (*Omphalia*) *hepaticus*, Cke., Hdbk., p. 95; Cke., Illustr., pl. 250B.

On lawns, by road sides, &c.

Very much resembling *O. pyxidata*, but differing in being rather coriaceous, even margin of pileus, and absence of reddish tinge in the gills.

Very tough, flexible, stem hollow, very tough, about 1 in. long and 1 line thick, equal but dilated into the pileus at the apex, brownish flesh-colour, commonly naked, rarely with white meal. Pileus coriaceo-membranaceous, convex and umbilicate then infundibuliform, sometimes undulately

lobed, $\frac{1}{2}$–$1\frac{1}{2}$ in. broad, even, glabrous, rufous flesh-colour when moist, somewhat tawny-tan and rather shining when dry. Flesh fibrous. Gills deeply decurrent, distant, distinctly connected by veins, narrow, whitish, becoming pallid (not flesh-colour), sometimes crisped. A very distinct species. (Fries.)

Omphalia demissa. Fr.

Pileus hygrophanous, about $\frac{1}{2}$ in. across, at first convex, soon expanded and umbilicate, subcarnose, reddish grey or buff, at length pale, minutely mealy; margin crenulate; gills decurrent, rather thick, flesh-coloured, especially towards the margin, forked, rather distant, slightly connected by veins; stem $\frac{1}{2}$ in. high, 1 line thick, flexuose, of the same colour as the pileus, smooth, shining, solid; spores oblong, oblique, 7×5 μ.

Agaricus (Omphalia) demissus, Fr., Hym. Eur., p. 160; Cke., Hdbk., p. 95; Cke., Illust., t. 250, fig. 1.

Agaricus (Omphalia) rufulus, B. & Br., Ann. Nat. Hist., no. 325.

On the ground among moss, in exposed places.

A very pretty and distinct species, with somewhat the habit of *Ag. laccatus*, but allied to *Ag. pyxidatus*. (B. & Br.)

Pileus $\frac{1}{2}$ in. across, at first convex, soon expanded and umbilicate, subcarnose, reddish-grey or buff, at length pale, minutely mealy; margin crenulate. Stem $\frac{1}{2}$ in. high, 1 line thick, flexuous, of the same colour as the pileus, smooth, shining, solid; gills decurrent, rather thick, flesh-coloured, especially towards the margin, forked, rather distant; interstices veiny. Spores oblong, oblique. A very pretty and distinct species, with somewhat the aspect of *Agaricus laccatus*, but allied to *Agaricus pyxidatus*. (B. & Br.).

Omphalia muralis. Sow.

Pileus $\frac{1}{2}$–$\frac{2}{3}$ in. across, flesh thin, tough, umbilicate, margin arched, radiately striate, glabrous, reddish-brown; margin crenulate; gills decurrent, narrowed at both ends, distant, pallid or white with a tinge of yellow; stem $\frac{1}{2}$–$\frac{2}{3}$ in. long, $\frac{1}{2}$ line thick, glabrous, coloured like the pileus, stuffed.

Agaricus muralis, Sow., t. 322; Cke., Hdbk., p. 95; Cke., Illustr., pl. 250c.

On walls, sandy banks, &c.

Intermediate between *O. hepatica* and *O. umbellifera;* differing from the former in the pileus being striate when moist, and the gills not being connected by veins; from the latter in the gills being narrowed behind. Known from *O. rustica* in the absence of a grey tinge in the pileus and stem.

Omphalia umbellifera. *Linn.*

Pileus about $\frac{2}{3}$ in. across, rather fleshy, convex then almost plane, often more or less wavy or upturned, radiately striate when moist, even and somewhat silky when dry; margin at first incurved and crenate; gills decurrent, very distant, broad behind, whitish or coloured like the pileus; stem about $\frac{1}{2}$ in. long, 1 line thick, coloured like the pileus, base downy, imperfectly hollow.

Agaricus (*Omphalia*) *umbelliferus*, Cke., Hdbk., p. 96; Cke., Illustr., pl. 271.

Agaricus umbelliferus, Linn., Suec., n. 1192.

In swamps, exposed pastures, &c.

Colour variable, grey, yellow, brownish, green, &c. Fries says the colour is at first watery white, and shining white when dry, and that it sometimes grows on wood. Known among allied forms by the thicker, almost flat pileus, and the broad, almost triangular, very distant gills.

The floccose substance of the pileus is thicker at the disc than in allied species, hence the pileus is less membranaceous and the umbilicus smaller. Gills very broad behind, triangular, decurrent, very distant, margin straight, sometimes dichotomous, &c. Colour very variable, commonly whitish, shining white when dry: in alpine regions, and on fir trunks clear yellow; pileus usually whitish when dry, often greyish in shady or scorched places and with the stem frequently velvety; on rotten beech trunks and in some shady localities dark umber. (Fries.)

Var. **abiegnus,** B. & Br.; Cke., Illustr., pl. 271c.

Pale yellow.

In considerable numbers on a very decayed fir-stump.

Var. **viridis,** Flor. Dan., t. 1672, f. 1; Cke., Illustr., pl. 271B.

Every part pale green.

Var. **myochrous**, Fries, Hym. Eur., p. 161.

Merulius fuscus, Withering, Arr., iv. p. 149.

Pileus rather fleshy, glabrous, brownish umber; stem strigose and rooting at the base; gills somewhat branched.

On sodden beech trunks.

Omphalia infumata. B. & Br.

Pileus obtuse, not membranaceous, greenish, then smoky; stem thin, yellow, gills few, broad, decurrent, distant, yellow.

Agaricus (Omphalia) infumatus, B. & Br., Ann. Nat. Hist., no. 1851; Cke., Hdbk., p. 96.

On bark among moss.

Pileus 2 lines across; stem 1 in. high, not a line thick, dilated at the base, tomentose, especially below; gills about 12, with smaller intermediate. Allied to *O. umbellifera*, but quite distinct from all its varieties. (Berk. and Broome.)

There is no specimen of the present species in the Berkeley herbarium, Kew; hence unfortunately the description of this and other minute species, for a like reason, is imperfect.

Omphalia buccinalis. Sow.

Wholly white. Pileus about ¼ in. across, trumpet-shaped, soon plane or depressed; gills deeply decurrent, triangular, distant, white.

Agaricus buccinalis, Sow., Fungi, t. 107; Cke., Hdbk., p. 96; Cke., Illustr., pl. 272A.

On twigs, &c.

This is certainly no form of *A. umbelliferus*; and it is too fleshy to be the same as *A. stellatus*. It is, as Sowerby says, not uncommon, and is in great perfection this Jan. 8, 1882. It has the habit of *A. ptychophyllus*, Cd., a species not noticed by Fries; but the gills are not plicate. (Berk. and Broome.)

Omphalia retosta. Fr.

Pileus ½–¾ in. across, flesh thin, plane then depressed, even when moist, polished and glabrous when dry, margin arched, incurved, entire, umber; flesh pale umber; gills slightly decurrent, equally narrowed at both ends, distant, distinct, pale umber; stem up to 1 in. long, 1 line thick, equal, glabrous, hollow, tough, paler than the pileus.

Agaricus (Omphalia) retostus, Fries, Epicr., p. 125; Cke., Hdbk., p. 96; Cke., Illustr., pl. 272B.

Somewhat resembling the umber form of *O. umbellifera*, but firmer, and the gills differ in resembling the segment of a circle in outline, that is broadest in the middle, and gradually narrowed to each end. Like *O. umbratilis* in colour and form, but readily known by distant gills.

Omphalia abhorrens. B. & Br.

Very foetid. Pileus about ½ in. across, umbilicate, smooth, brown, becoming pale; gills narrow, decurrent, pale; stem about 1 in. long, slender, slightly thickened at the apex, coloured like the pileus.

Agaricus (Omphalia) abhorrens, B. and Br., Ann. Nat. Hist., no. 1853; Cke., Illustr., pl. 272C.; Cke., Hdbk., p. 97.

Among short grass, on lawns, &c.

Allied closely to *O. retosta*, but clearly distinct, apart from its disgusting smell; stem sometimes pruinose when young. (B. & Br.)

Omphalia pseudoandrosacea. Bull.

Whitish or greyish. Pileus about ¼ in. across, flesh very thin, convex or expanded, deeply umbilicate, and at length infundibuliform, striately plicate, glabrous, margin crenulate; gills deeply decurrent, distant, distinct, rather triangular; stem about 1 in. long, not ½ line thick, equal, stuffed.

Agaricus pseudoandrosaceus, Bulliard, t, 276; Cke., Illustr., pl. 251A; Cke., Hdbk., p. 97.

Among short grass.

Allied to *O. griseo-pallida*, but much more slender. Differs from *O. grisea* in the umbilicate or infundibuliform pileus.

Omphalia griseo-pallida. Desmaz.

Pileus up to ½ in. across, flesh thin, convex then plane, umbilicate, even, glabrous, somewhat shining, hygrophanous, brownish-grey becoming hoary, often unequal and excentric, margin drooping but not incurved; gills decurrent, broadest behind, distant, rather thick, colour of the pileus when moist, when dry becoming not pale as usual, but darker; stem up to ½ in. long, thin, equal or slightly thickened upwards, rather firm, glabrous, brown, rather hollow when old.

Agaricus (*Omphalia*) *griseo-pallida*, Desmazieres, Crypt., no. 120; Cke., Hdbk., p. 97; Cke., Illustr., pl. 241B.

On naked ground.

Somewhat resembles *O. umbellifera* and *O. rustica*, but distinguished from both by the pileus not being striate when moist.

Omphalia stellata. Fr.

White. Pileus up to ½ in. across, truly membranaceous, convex, umbilicate, pellucidly striate, glabrous; gills decurrent, rather distant, distinct, thin, not triangular; stem usually less than 1 in. long, very slender, fragile, stuffed then hollow, often curved, base dilated and radiately strigose or hairy; spores elliptical, 6–7 × 4 μ.

Agaricus (*Omphalia*) *stellatus*, Fries, Syst. Myc., i. p. 163; Cke., Hdbk., p. 97; Cke., Illustr., p. 241c.

On rotten trunks, wood, &c.

Gregarious. Allied to *O. integrella*, but distinguished by the broader gills. Distinguished from *Omphalia umbellifera* by being more slender, pileus generally excentric, and general form.

II. MYCENARII.

* *Campanellae.*

Omphalia campanella. Batsch.

Pileus about ½ in. across, membranaceous; campanulately convex, sometimes becoming expanded, umbilicate, striate, hygrophanous, rusty-yellow, gills decurrent, rather crowded, connected by veins, yellowish; stem about 1½ in. long, not a line thick, smooth, horny, bay, tapering and with tawny down at the base, hollow.

Agaricus campanella, Batsch, Fr., Syst. Myc., i. p. 166; Cke., Illustr., pl. 273, f. 1; Cke., Hdbk., p. 98.

In fir woods, often on fir trunks.

Stem horny, rigid, fistulose, 1–2 in. long, scarcely a line thick, glabrous, bay; base attenuated and rooting, tawny, strigose. Pileus membranaceous, tough, campanulate, soon convex; umbilicate, about ½ in. across, yellow-ferruginous, hygrophanous. Gills deeply decurrent, arcuate, rather

crowded, beautifully connected by veins, yellow, not pruinose, sometimes veined. (*Fries.*)

Var. **badipus**, Fries, Hym. Eur., p. 162; Cke., Hdbk., p. 98; Cke., Illustr., pl. 273B.

Stem stuffed, somewhat fibrillose, base slightly bulbous and with tawny down.

On the ground; gregarious.

Pileus 3–11 lines across, broadly campanulate, sometimes quite plane, of a beautiful yellow, inclining to ferruginous, edge slightly silky; gills yellow; stem 1–2 in. high, ½–1 line thick, scarcely fistulose, yellow above, then rufescent, clothed with little yellow scales, thickest below, and there covered with a dense tawny tomentum. (*Cooke.*)

Var. **papillata**, Fries, Hym. Eur., p. 162.

Pileus acutely conical, at length becoming depressed round the umbo.

On the ground, in pine woods, &c.

Var. **myriadea**, Kalchb., in Fries, Hym. Eur., p. 162.

Usually about half the size of the typical form; densely caespitose, pale tawny, gills pale brick-red with a flesh tinge.

Covering pine trunks and imparting a velvety appearance owing to their numbers.

This var. has not yet been recorded for Britain.

Omphalia picta. Fr.

Pileus 3–5 lines across, up to 7 lines high, membranaceous, cylindrico-campanulate, fuscous, disc umbilicate, usually yellow, the perpendicular sides striate, margin entire, paler; gills adnate, subdecurrent, from the singular form of the pileus, very broad, higher then broad, distinct, distant, whitish then tinged yellow; stem 2–3 in. long, very slender, horny, rigid, stuffed, straight, glabrous, bay, base discoid, apex slightly thickened, paler.

Agaricus (*Omphalia*) *pictus*, Fries, Epicr., p. 126; Cke., Hdbk., p. 98; Cke., Illustr., pl. 272C.

On fallen twigs and branches.

There are two forms as follows:—B. Pileus conical, papillate; C. smaller, umbilicus obsolete, disc coloured like rest of pileus: stem slender, and without the expanded membranaceous disc at the base. Among fallen pine leaves. (Fries.)

Omphalia camptophylla. Berk.

Pileus about ½ in. across, flesh very thin; convex, then expanded, deeply striate, disc brown, pale and greyish towards the margin; gills white, ascending for some distance from the front then abruptly decurrent; stem about 2 in. high, very slender, equal, minutely downy, whitish, with radiating base, minutely fistulose.

Agaricus (Omphalia) camptophyllus, Berk., Outl., p. 133; Cke., Hdbk., p. 98; Cke., Illustr., pl. 210A.

On sticks, &c.

Solitary or subgregarious. Pileus ½ in. broad, brown, with a grey margin, stem 2 in. or more high, not a line thick, with a few white fibres, under a lens minutely but beautifully pubescent; base radiate-strigose, at first yellow, when full-grown pale above, pale rufescent below. (Berk.)

Omphalia grisea. Fr.

Pileus about ½ in. across, almost membranaceous; campanulate then convex, slightly papillate, and at length a little umbilicate, not becoming truly expanded, glabrous, striate, hygrophanous, livid-grey then hoary; gills shortly decurrent, distant, distinct, broad, rather thick, greyish-white; stem up to 3 in. long, 1 line thick, apex slightly thickened, round, straight, even, glabrous, greyish-white, not rooting, rather firm, cartilaginous, soon hollow; spores 7–8 × 4 μ.

Agaricus (Omphalia) griseus, Fries, Epicr., p. 127; Cke., Hdbk., p. 99; Cke., Illustr., pl. 210B.

Among grass in woods, &c.

Recalling to mind *Cantharellus devexus*, but differing in the more numerous, broader gills.

Omphalia umbratilis. Fr.

Pileus about 1 in. across, almost membranaceous, obtusely campanulate, then convex, umbilicate, glabrous, blackish-brown, margin slightly striate; gills very slightly decurrent, arcuate, crowded, broad, narrowed at both ends, white with a brownish tinge; stem 1–8 in. long, about 1 line thick, equal, even, glabrous, blackish-brown, tough, tubular, tube stuffed; spores elliptical, 7 × 5 μ.

Agaricus (Omphalia) umbratilis, Fries, Epicr., p. 127; Cke., Hdbk., p. 99; Cke., Illustr., pl. 274A.

Sides of ditches and damp places.

Gregarious, tough, hygrophanous; pileus hoary when dry. Somewhat resembling *O. retosta*, but distinguished by the crowded gills.

Omphalia fibula. Bull.

Pileus up to ½ in. across, membranaceous, margin of pileus drooping then expanded, sometimes truly conical and papillate, usually umbilicate and at length quite infundibuliform, hygrophanous, glabrous, striate when moist, pale when dry, orange-yellow, but sometimes brownish or entirely white; gills deeply decurrent, distant, distinct, broad, whitish; stem 1–1½ in. long, very slender, coloured like the pileus, stuffed then hollow; spores elliptical, 4–5 × 2 μ.

Agaricus fibula, Bulliard, Champ. France, 186, f. 1; Cke., Hdbk., p. 99; Cke., Illustr., pl. 274B.

Damp places among moss, &c.

Also usually abundant on ground that has been burnt.

Very slender and delicate, but tough, very elegant. Stem usually very slender and weak, but sometimes, especially in Alpine districts, more robust and straight.

Pileus 1–6 lines broad, at first hemispherical, the margin inflexed, then plane; more or less depressed, yellow or tawny with a dusky centre, obscurely striated, the whole minutely pilose. Gills yellowish or white, distinct, not ventricose, decurrent. Spores white, round.

Stem 1–1½ in. high, not a line thick, slender, yellow, or tawny with a violet-brown apex, the whole minutely pilose like the pileus and obsoletely fibrillose. (Berk.)

Var. **Swartzii**, Fries, Monogr., i. p.17; Cke., Hdbk., p. 99; Cke., Illustr., pl. 274B.

About the size of the typical form, but differing in the almost plane, whitish pileus with a brown disc, stem whitish, apex tinged with violet; altogether firmer; spores elliptical, 4 × 2.

On the ground.

Omphalia directa. B. & Br.

Very minute, nail-shaped, pileus rarely 1 line across, flat at the apex, white; gills decurrent, white; stem rather wavy, not 1 in. high, very slender, whitish with a tinge of rufous, clad with long hairs at the base.

Agaricus (Omphalia) directa, Berk. and Broome, Ann. Nat. Hist., no. 1931; Cke., Hdbk., p. 100; Cke., Illustr., pl. 251 A.

On dead leaves; gregarious.

Stem slightly rufous, thread-like, not an inch high. (B. and Br.)

Omphalia belliae. Johnst.

Pileus about ½ in. high and across, membranaceous, dry, top-shaped, infundibuliform, mouth partly closed by the incurved margin, pale wood-colour; gills decurrent, thick, paler than the pileus, interstices veined; stem about 1½ in. long, not 1 line thick, equal, cartilaginous, brownish below, pale above, hollow, adhering by a white cottony base.

Agaricus belliae, Johnston, Ann. Nat. Hist., ser. i., vol. vi., t. 10, f. 1; Cke., Illustr., pl. 251 A; Cke., Hdbk., p. 100.

On dead stems of reed.

Readily recognised by the peculiar form of the pileus.

Omphalia gracillima. Weinm.

Snow-white. Pileus 1–3 lines across, membranaceous, somewhat downy or flocculose, sulcate; gills decurrent, rather distant, thin; stem about ½ in. high, very slender, base cottony.

Agaricus gracillimus, Weinm., Ross., p. 121; Cke., Hdbk., p. 100; Cke., Illustr., pl. 252, f. 1.

On decaying herbaceous stems, and in damp places.

A very delicate species, drying up, white, rather flocculose when young; stem minutely hollow, as thin as a hair, soft, 3–6 lines long, base cottony; pileus membranaceous, hemispherical, sometimes umbilicate, sometimes papillate, never turned up, 2–3 lines broad, flocculose then almost glabrous, manifestly striate when moist. Gills decurrent, thin, rather distant, alternate ones shorter.

Agreeing in many points with *O. stellata*, but more delicate, pileus at first flocculose, form, and thin gills distinguish it. (Fries.)

Omphalia bullula. Brig.

Wholly white. Pileus 1–2 lines across, membranaceous, even, hemispherical, diaphanous; gills arched, decurrent; stem not 1 in. long, very slender.

Agaricus bullula, Briganti, t. 16, f. 1; Cke., Hdbk., p. 100; Cke., Illustr., pl. 252B.

On dead sticks.

Somewhat resembling *O. integrella*, distinguished by the even, diaphanous pileus, and the broader gills. Scattered.

** *Integrelli.*

Omphalia integrella. Pers.

White. Pileus 2–4 lines broad, membranaceous, conical when young, soon hemispherical, often deformed, expanded, disc depressed, then ½ in. and more across, margin striate; gills decurrent, narrow, fold-like, distant, usually disappearing within the margin of the pileus, equal or branched as in *Cantharellus*, but with the margin acute; stem up to 1 in. long, slender, fistulose, rather firm, pilose below, base often attached by a minute downy bulb.

Agaricus (Omphalia) integrellus, Pers., Icon. Pict., t. 13, f. 5; Cke., Hdbk., p. 100; Cke., Illustr., pl. 252C.

On rotten wood, leaves, grass, and on damp ground in shady places.

Small, commonly fasciculate, especially when growing on wood, when the stem is incurved, fragile, variable in form, entirely white. (Fries.)

CLITOCYBE. Fries. (figs. 14, 15, p. 301.)

Pileus generally fleshy at the disc, and becoming thin towards the margin, flexible or tough, for the most part plano-depressed or infundibuliform, margin involute; gills more or less decurrent or adnate; never sinuate: stem central, externally compactly fibrous, somewhat elastic, stuffed, often becoming hollow; veil either forming a downy silkiness on the pileus, or obsolete; spores elliptical or subglobose, smooth.

Clitocybe, Fries, Syst. Myc., i. p. 70; Cke., Hdbk., p. 45 (as a subgenus of *Agaricus*).

Undoubtedly the most difficult genus, so far as the limitation of species is concerned, that is included in the Agaricinae.

Differs from *Omphalia* in the stem being of a fibrous texture externally, and not compact and polished, or cartilaginous. *Tricholoma* differs in the gills being sinuate or rounded behind. Collybia also differs in the adnexed or almost free gills being rounded behind, and in the cartilaginous stem.

Terrestrial, often clustered.

ANALYSIS OF THE SPECIES.

Group A. Pileus fleshy, often becoming pale when dry, but not hygrophanous. Flesh firm, not watery, nor splitting into two layers. Differs from Series B. in becoming pale and minutely silky when dry.

I. Disciformes.

Pileus somewhat equally fleshy; convex, then plane or depressed, obtuse; gills at first adnate or regularly adnato-decurrent. Normally solitary.

* Pileus grey or brownish.

** Pileus violet or rufescent.

*** Pileus yellowish.

**** Pileus greenish or pallid.

***** Pileus white, becoming shining white. Require to be carefully distinguished from the white hygrophanous species, and from the white species of *Paxillus.*

II. Difformes.

Pileus fleshy at the disc, margin thin, umbonate at first, then expanded and depressed, irregular. Gills unequally decurrent, long in some places, short in others; sometimes rounded or adnexed on one side, as in *Tricholoma.* Stem somewhat cartilaginous outside, but fibrous, caespitose, often connate, form very variable, sometimes quite solitary.

III. Infundibuliformes.

Pileus becoming thin towards the margin from the fleshy disc, at length entirely infundibuliform or the centre deeply umbilicately depressed. Stem spongy, externally fibrous. Gills descending, deeply and equally decurrent from the first. Pileus often becoming discoloured or pale, but not hygrophanous.

* Pileus coloured, or growing pallid, superficially (at least under a lens), innately flocculose or silky, absorbing the moisture, hence not moist.

** Pileus coloured or pallid, glabrous, moist in rainy weather.

*** Pileus shining white, with scattered superficial flocci, then almost glabrous.

Group B. Flesh of pileus thin, truly hygrophanous, soft, watery.

IV. Cyathiformes.

Flesh of pileus thin (consisting of two separable sheets), disc not compact, hygrophanous, depressed then cup-shaped; gills adnate at first, then decurrent, descending, straight. Colour dingy when moist.

V. Orbiformes.

Pileus somewhat fleshy, hygrophanous, convex then flattened or depressed, polished, not squamulose nor mealy; gills plane, horizontal, crowded, thin, adnate or with a decurrent tooth. Colour dingy or watery, becoming pale.

* Gills greyish or olive. Pileus at first dark.

** Gills whitish. Pileus becoming pale.

VI. Versiformes.

Pileus thin, convex then deformed, tough, more or less squamulose or furfuraceous; gills adnate, broad, rather thick, for the most part distant and powdered with white.

* Pileus squalid or brownish with dark squamules.

** Pileus bright, all one colour.

I. DISCIFORMES.

* *Pileus grey or brownish.*

Clitocybe nebularis. Batsch.

Pileus 2–4 in. across, flesh white, very thick at the disc and gradually becoming thinner towards the margin; convex, often obtusely gibbous, greyish soon pale and livid; gills slightly decurrent, arcuate, crowded, rather narrow, white then pallid; stem 2–3 in. long, up to ¾ in. thick, slightly attenuated upwards, whitish, fibrillosely striate, firm, stuffed; spores elliptical, 6 × 3·5 μ.

Agaricus nebularis, Batsch, Elen., f. 193; Cke., Hdbk., p. 45; Cke., Illustr., pl. 79.

In woods, among dead leaves, &c.

Esculent. Stem 3 in. long, about 1 in. thick, white. Pileus 3–5 in. broad, clouded with grey, or dingy brown, at length grey, sometimes pruinose. (Cooke.)

Gregarious, subcaespitose, tough, somewhat cartilaginous. Stem solid or stuffed, fleshy-fibrous, 2–3 in. long, in pine woods, 2–3 in. in damp mixed woods, 4–6 lines thick, almost equal but often twisted and curved, glabrous, dingy white, apex more or less powdered with white meal. Disc of pileus truly fleshy, but becoming thin towards the margin, convex then plane, obtuse, or when young distinctly gibbous, sometimes symmetrical and regular, at others flexuous and waved, even, glabrous, rather hygrophanous, 1–3 in. across, smoky-brown, soon livid or grey when dry, never virgate. Flesh hyaline when moist, becoming white when dry. Gills adnate in the regular form, but when the pileus is irregular, decurrent or rounded; crowded, distinct, greyish-white from the first. Smell none. (Fries.)

Clitocybe clavipes. Pers.

Pileus 1½–2½ in. across, rather convex at first, soon plane, at length almost obconical, very obtuse, even, glabrous, dry, sometimes all one colour, brown, sooty, livid-grey, &c., sometimes whitish towards the margin, very rarely entirely white; flesh loose in texture, white, thin at the margin; gills deeply decurrent, continued down the stem

as straight lines, rather distant, flaccid, quite entire, broad, entirely and persistently white; stem 2 in. long, base ½ in. and more thick, conically attenuated upwards, rather fibrillose, livid sooty, solid, spongy within, spores elliptical, 6–7 × 4 μ.

Agaricus clavipes, Pers., Syn., p. 353; Cke., Hdbk., p. 45; Cke., Illustr., pl. 80.

In woods, especially pine.

Resembling *C. nebularis* in colour, but quite distinct. Smell pleasant, entire substance soft and elastic. (Fries.)

Clitocybe comitalis. Fr.

Pileus about 1½ in. across, fleshy, convex then plane, obtuse, even, glabrous, rather moist but not hygrophanous, every part coloured alike, sooty-umber, almost black; flesh firm, white; gills very slightly decurrent, horizontal, plane, thin, crowded, white; stem 2–3 in. long, 3–4 lines thick, equally attenuated upwards from the base, glabrous, sooty, elastic, stuffed; spores elliptical, 7–8 × 4 μ.

Agaricus comitalis, Fries, Monogr., i. p. 5; Fries, Icon., t. 47, f. 2.

Damp places among mosses in pine woods, &c.

Distinguished by the blackish colour of the almost flat pileus, and the very slightly decurrent gills. Somewhat allied to *C. clavipes*, but firmer, smaller, and inodorous.

Clitocybe gangraenosa. Fr.

Pileus fleshy, convex then plane, obtuse, whitish, at first sprinkled with white powder, then naked, variegated, virgate; gills slightly decurrent, arcuate, crowded, dingy white; stem somewhat bulbous, soft, striate, spongy, solid.

Agaricus (Clitocybe) gangraenosus, Fries, Epicr., p. 56; Cke., Hdbk., p. 45.

In woods.

Stinking; large, flesh becoming blackish and variegated with black. Stem curved, sometimes excentric. Pileus whitish, here and there greenish, livid, &c. (Fries.)

Pileus whitish, livid, at length turning jet-black. (Cooke.)

Var. **nigrescens**, Lasch., Linn., vol. iv. n. 521; Cke., Hdbk., p. 46.

Whitish; pileus thin, soft, at first convex, obtuse, then

plane, somewhat umbonate, and somewhat depressed; gills decurrent, very much crowded, narrow; stem solid, downy.

In larch plantations.

Pileus 2–3 in. broad, stem 1¼–1½ in. long, 2–3 lines thick. Odour rather sweet, taste unpleasant. (Cooke.)

Clitocybe polius. Fr.

Pileus 1–2 in. across, flesh ¼ in. and more thick at the disc, gradually thinning out towards the margin; convex then plane, often obtusely gibbous especially when young, glabrous, pale grey, not hygrophanous; gills rather deeply and equally decurrent, closely crowded, very narrow, white; stem 2–3 in. long, ½ in. or more thick at the base, slightly attenuated upwards, glabrous, whitish, solid.

Agaricus (*Clitocybe*) *polius*, Fries, Hym. Eur., p. 80; Fries, Icon., p. 44, t. 48, fig. 1.

Agaricus fumosus, var. *polius*, Cke., Hdbk., p. 52 (exclu. syn., Saund. & Sm., t. 13).

In woods.

Caespitose, clusters sometimes small, at others consisting of numerous individuals connate at the base; the first condition is the typical one, more regular, stem solid, rather fleshy (not cartilaginous), equal, or slightly thickened at the base, straight, glabrous, 2–3 in. long, white. Pileus fleshy, orbicular, convex then flattened, 1 in. and more broad, even, glabrous, pale grey, opaque, not hygrophanous. Flesh white. Gills equally decurrent, very much crowded, exceedingly narrow, quite entire, white. The *second* forms luxuriant clusters of large size, stems very numerous, connate at the base, thinner and often flexuous; pileus thinner, often irregular from mutual pressure.

The superficial appearance and analogous form suggest that the present species might be a form of *C. fumosa*, but the structure is very different. *C. polius* is fleshy; *C. fumosa* somewhat cartilaginous, apex of stem pruinose, pileus at first sooty then livid, somewhat hygrophanous; flesh hyaline, whitish when dry. Gills irregularly decurrent, greyish-white. (Fries.)

Clitocybe inornata. Sow.

Pileus 3–4 in. across, flesh thick, white; plane or depressed, obtuse, even, smooth, cuticle separable, pale dingy

greyish-tan with a tinge of olive; gills slightly decurrent, 2 lines broad, crowded, plane; stem about 1½ in. long, 4–6 lines thick, nearly equal, longitudinally rugulose, firm, greyish.

Agaricus inornatus, Sow., t. 342; Cke., Hdbk., p. 46; Cke., Illustr., pl. 246A (copied from Sowerby).

Among grass.

A species that has not been met with since Sowerby's time, and consequently not well understood.

Clitocybe hirneola. *Fr.*

Pileus about ½ in. across, flesh thin, plane then depressed, umbilicate, very even, shining, slightly viscid when fresh, cuticle minutely silky, hoary; tough, dry, grey then whitish; gills slightly decurrent, crowded, thin, rather broad, greyish-white; stem up to 2 in. long, scarcely 1 line thick, equal, flexuous, elastic, glabrous, grey, apex with white meal; spores elliptical, greyish-white, $5 \times 3\ \mu$.

Agaricus (Clitocybe) hirneolus, Fries, Epicr., p. 58; Cke., Illustr., pl. 246; Cke., Hdbk., p. 46.

Among moss and grass by roadsides, &c.

Small, gregarious, tough, but not hygrophanous.

Var. **major**, Fries, Monogr., i. p. 103.

Pileus, 1½ in. broad, undulated, somewhat zoned, whitish.

** *Pileus violet or rufescent.*

Clitocybe cyanophaea. *Fr.*

Pileus 3–4 in. across, rather fleshy; convex then plane, obtuse, glabrous, brownish with a blue tinge; gills deeply decurrent, crowded, violet becoming pale; stem about 3 in. long, ½ in. across at the thickened base, attenuated upwards, bluish when young, apex abruptly white, solid, glabrous.

Agaricus (Clitocybe) cyanophaeus, Fries, Hym. Eur., p. 82.

Agaricus nudus, Harz., t. 30.

In woods, &c.

Somewhat resembling *Tricholoma nudum*, but distinct in the deeply decurrent gills, &c.

Var. **Pengelleyi**, B. & Br., Cke., Hdbk., p. 46; Cke., Illustr., pl. 264.

It is possible that this form may be specifically distinct; but though it differs so much from the figure given by Gonnerman and Rabenhorst, the characters answer so well to those which are given in Hym. Eur., that we do not consider it at present distinct. It occurred on two occasions; the abrupt white apex of the stem is very remarkable. (B. and Br.)

The so-called variety only appears to differ from the typical form in having the stem attenuated at the base.

Clitocybe opiparia. Fr.

Pileus 2–4 in. across, flesh thick, white; convex then plane, obtuse, even, glabrous, shining, yellowish red; gills slightly decurrent, crowded, whitish; stem 2–3 in. long, ½ in. and more thick, more or less equal, whitish, solid.

Agaricus (Clitocybe) opiparius, Fries, Epicr., p. 59; Cke., Hdbk., p. 382; Cke., Illustr., pl. 1183.

Among moss under trees, &c.

Stem solid, fleshy, firm, not elastic, 2–3 in. and more long, ½–1 in. thick, equal or slightly attenuated at the base, glabrous, white. Pileus fleshy, convex then expanded, obtuse, 2–4 in. broad, even, at first with scattered fibrils, but soon very glabrous, without a separate pellicle, becoming pale but not hygrophanous, rosy flesh-colour, gilvous, or fleshy tan-colour; flesh compact, white, unchangeable. Gills equally narrowed behind, acute, adnate or adnato-decurrent, crowded, usually connected by transverse veins, 3–4 lines broad, white. Smell not remarkable, taste pleasant. (Fries.)

Clitocybe amara. Fr.

Taste very bitter. Pileus 1½–2½ in. across, flesh rather thick at the disc, margin thin, convex then plane, obtuse, or sometimes slightly umbonate, dry, rufescent or yellowish tawny, slightly flocculose; gills slightly decurrent, about 1½ line broad, crowded, white; stem about 2 in. long, 4–6 lines thick, tough, white, floccose then almost glabrous, solid; spores elliptical, 4 × 2 μ.

Agaricus (Clytocybe) amarus, Fries, Syst. Myc., i. p. 87; Cke., Hdbk., p. 47; Cke., Illustr., pl. 134A.

In woody places.

A very distinct species, but the variable colour of the pileus is misleading. Varies to rufous-brown, whitish rufous,

paler towards the margin. Stem about 2 in. long, ½ in. thick. Pileus often unequal and wavy, not polished under a lens; flesh firm but not thick. Taste very bitter. (Fries.)

Clitocybe socialis. Fr.

Pileus about 1 in. across, flesh rather thick at the disc; convex, soon expanded, rather acutely umbonate when young, then usually obtuse with age, even, glabrous, pale yellowish-red or almost flesh-colour; gills very slightly decurrent, scarcely crowded, becoming yellowish; stem about 1 in. long, 1–2 lines thick, ascending, glabrous, reddish, solid.

Agaricus (Clitocybe) socialis, Fries, Icon., p. 47, pl. 49; Cke., Hdbk., p. 47; Cke., Illustr., pl. 134B.

On fallen pine leaves.

A very pretty species, densely gregarious, inodorous. Stem solid, fibrous, usually ascending, 1 in. long, 1 line or a little more thick, base thickened and rooting among pine leaves, strigose as in *Marasmius peronatus*. Flesh of pileus thin, white, convex then expanded, acutely umbonate, especially when young, about 1 in. broad, even, glabrous, dry, reddish or for the most part reddish-yellow. Gills plano-decurrent, not crowded, becoming yellowish. (Fries.)

*** *Pileus becoming yellowish.*

Clitocybe amarella. Pers.

Smell strong; taste very bitter. Pileus about 2 in across, plane, firm, somewhat umbonate, glabrous, reddish-yellow or pale fawn-colour, glabrous; gills slightly decurrent, crowded, pallid with a grey tinge, dichotomous, somewhat shining; stem about 2 in long, 2 lines thick, tough, equal, base with white down, solid.

Agaricus amarellus, Persoon, Myc. Eur., iii. p. 99; Cke., Hdbk., p. 47.

Among grass (a doubtful native). The taste is bitter and disgusting, the smell like that of prussic acid. (B. & Br.)

Clitocybe vernicosa. Fr.

Pileus 2–3 in. across, flesh rather thick, convex then expanded, regular, obtuse but depressed when old, even, glabrous, shining deep yellow, margin incurved; flesh white;

gills slightly decurrent, equally narrowed behind, rather distant, yellow; stem about 1 in. long, 3 lines thick, equal, even, glabrous, yellow, firm, tough, stuffed.

Agaricus (Clitocybe) vernicosus, Fries, Epicr., p. 60; Cke., Hdbk., p. 47; Cke., Illustr., pl. 265A.

In larch woods, &c.

Superficially resembling *Tricholoma cerinum*, but easily distinguished by the gills not being crowded, but truly decurrent, and not sinuate. Stem stuffed, firm, tough, 1 in. long, about 3 lines thick, equal, glabrous, yellow; pileus fleshy, convex then expanded, obtuse, 1–2 in. and more across, even, glabrous, shining, yellow with a red tinge, margin involute; flesh firm, white; gills adnato-decurrent, equally attenuated behind, yellow, rather distant. (Fries.)

Clitocybe venustissima. Fr.

Pileus 1–2 in. across, flesh coloured; convex then plane, obtuse, margin even when young then striate and elegantly crenate, glabrous, orange with a tinge of red, becoming pale; gills decurrent, rather distant, coloured like the pileus; stem 1–1½ in. long, 1–2 lines thick, smooth but not polished, equal, glabrous, reddish-orange, stuffed then hollow; spores elliptical, smooth, 6 × 3·5 μ.

Agaricus (Clitocybe) venustisssimus, Fries, Monogr., ii. p. 289; Cke., Illustr., pl. 265B.; Cke., Hdbk., p. 47.

Among rotten pine leaves, &c.

Gregarious, inodorous, slenderer than *C. vernicosa*; stem stuffed when young, then hollow, 1½ in. long, 2–3 lines thick, equal, glabrous, reddish-orange, base with white down. Pileus slightly fleshy, convex then expanded, regular, obtuse or somewhat umbilicate when old, 1–2 in. broad, silky, smooth, shining tawny, or reddish-orange, but becoming pale, margin sometimes even, sometimes crenate in large forms. Flesh similarly coloured. Gills truly decurrent, rather distant, golden yellow with a red or tawny tinge. (Fries.)

Clitocybe subalutacea. Batsch.

Pileus 1–2 in. across, fleshy, soft, convexo-plane then depressed, obtuse, unequal, glabrous, yellowish, becoming pale; gills adnato-decurrent, broad, rather distant, whitish; stem 2 in. long, stuffed, firm, elastic, naked.

Agaricus subalutaceus, Batsch, f. 194; Cke., Hdbk., p. 48.

Under trees.

Stature of *C. venustissima*, but firmer and the stem longer. Pileus becoming pale. Smell weak, resembling aniseed, or obsolete. (Fries.)

**** *Pileus greenish or pallid.*

Clitocybe odora. Sow.

Fragrant. Pileus about 2 in. across, flesh rather thick, tough; soon plane and wavy, even, smooth, pale dingy green, silky when dry; gills adnate, rather close, broad, greenish or pallid; stem about 1–1½ in. long, 2 lines thick, base incrassated, elastic, stuffed; spores elliptical, 6–8 × 4–5 μ.

Agaricus odorus, Sowerby, t. 42; Cke., Hdbk., p. 48; Cke., Illustr., pl. 101.

In woods.

Readily distinguished by the strong, aniseed smell, dingy bluish-green pileus, and the pallid or greenish gills.

Sometimes somewhat caespitose. Tough; size variable, colour varies between pale green and aeruginous-grey, usually all coloured alike, but the gills are sometimes white; smell pleasant, spicy, especially when dry. (Fries.)

We consider *A. viridis*, Withering, to be the same species, although Fries regards them as distinct. (Cooke.)

Clitocybe Trogii. Fr.

Smell very fragrant, spicy. Pileus about 2 in. across, flesh rather thick at the disc, becoming thin towards the margin, convex then expanded, obtuse, glabrous, minutely silky, uniform greyish-white, dull and opaque; gills slightly decurrent, crowded, about 1½ line broad, whitish; stem about 1 in. long, 2–3 lines thick, almost equal, whitish, base downy, solid.

Agaricus (Clitocybe) Trogii, Fries, Epicr., p. 59; Cke., Hdbk., p. 48; Cke., Illustr., pl. 102.

Among leaves.

Agreeing with *C. odora*, in the fragrant, spicy smell, but known by the dingy pale grey, not green pileus, and the stouter build of the entire fungus.

The colour approaching that of *C. metachroa.* Very fragrant. (Cooke.)

Clitocybe rivulosa. Pers.

Pileus 1–3 in. across, flesh thin, convex then plane and depressed, obtuse, often undulately lobed, dingy flesh-colour or rufescent, becoming pale, glabrous, then covered with a whitish down; gills slightly decurrent, broad, rather crowded, pinkish white; stem about 2 in. long, 3–4 lines thick, rather fibrillose, tough, elastic, whitish, stuffed; spores elliptical, 6 × 3·5 μ.

Agaricus rivulosus, Persoon, Syn., p. 369; Cke., Hdbk., p. 48; Cke., Illustr., pl. 200A.

Among grass by road-sides, &c.

Mossy pastures, road-sides &c. From its variability in size and colour not usually recognised; solitary or caespitose, most luxuriant in late autumn during rainy weather. Stem stuffed, pith spongy, often becoming hollow, tough, elastic, 1–2 in. long, about 3–4 lines thick, equal, somewhat fibrillose, becoming whitish. Pileus fleshy, rather thin, convex, then plane, at length depressed, never umbonate, regular when young, 1–2 in. across, but becoming successively expanded, and at length 3–4 in. across, wavy, undulately lobed, at first with whitish, closely adpressed down, at length truly broken up and downy; margin at first incurved, downy; at first with a tinge of flesh-colour, but becoming white when old and dry, sometimes tinged brownish; flesh compact, white; gills obliquely acute behind, not equally attenuated, adnate then somewhat decurrent, broad, rather crowded, with a flesh-colour tinge, then whitish, smell pleasant, taste sweet. (Fries.)

Var. **Neptuneus,** Batsch, Elench., fig. 18; Cke., Illustr., pl. 200B.

Smaller than the typical form.

***** *Pileus white, shining when dry.*

Clitocybe cerrusata. Fr.

Pileus 1½–3 in. across, flesh thick at the disc, becoming thin towards the margin; convex then almost plane, obtuse, even, minutely floccose then almost glabrous, white; gills adnate, then decurrent, very much crowded, thin, perma-

nently white; stem about 2 in. long, 3–5 lines thick, smooth, *tough, elastic, naked, spongy and solid, white.*

Agaricus (*Clytocybe*) *cerrusatus*, Fries, Syst. Myc., i. p. 92; Cke., Hdbk., p. 49; Cke., Illustr., pl. 121.

Among dead leaves, &c.

Taste mild, smell almost obsolete. *Stem rather thickened* at the base and often tomentose. Pileus said to be gibbous, but not umbonate nor becoming rufescent. Gills not changing to yellowish. (Fries.)

Entirely white, inodorous, taste sweet, stem solid, fibrous, elastic, 2–3 in. long, base thickened and more or less covered with white down, naked upwards, smooth. Peleus fleshy, convex then expanded, obtuse or gibbous, 2–3 in. broad, even, glabrous, floccosely fibrillose at first, margin involute, downy. Flesh soft, white. Gills adnate then slightly decurrent, crowded, thin, quite entire, narrow, never tinged with yellow. (Fries.)

Var. **difformis**, Fries, Hym. Eur., p. 86; Cke., Hdbk., p. 49; Cke., Illustr. pl. 122.

Caespitose; often very large, pileus undulately lobed; stem short, longitudinally rugose; gills at length pallid.

The pileus is sometimes adpressedly floccose at first, from 2 to 7 in. across in the same cluster, the larger stems 1 in. thick and long. (Fries.)

Clitocybe phyllophila. Fr.

Whitish-tan. Pileus 1–3 in. across, rather fleshy, convex then plane, becoming umbilicate and depressed, sometimes wavy, smooth and even; gills thin subdistant, white then tinged with ochre, rather broad, very slightly decurrent; stem 2–3 in. long, equal, stuffed then hollow, whitish, tough, silky-fibrillose; spores $6 \times 4\ \mu$.

Agaricus (*Clytocybe*) *phyllophilus*, Fries, Hym. Eur., p. 87; Cke., Illustr., t. 81. (Colour too white, both pileus and gills.)

Among leaves in woods, &c.

Somewhat caespitose, tough, not at all hygrophanous, smell scarcely observable. Stem elastic, fibrous externally, stuffed with a spongy pith which sometimes disappears, leaving the stem hollow, always tough, base incurved (but not bulbous) downy, from 2–3 in. long, for the rest very

variable, sometimes erect, sometimes decumbent, at times glabrous above, white. Pileus fleshy, convex then plano-depressed, obtuse, but never truly infundibuliform, often excentric and repand, 2–4 in. across, pale tan then pallid-white (same colour both moist and dry), surface with a very delicate silky down, silky towards the margin. Gills adnate, slightly decurrent, 2–3 lines broad, scarcely crowded, white at first then becoming pallid or almost whitish-tan. (Fries.)

Clitocybe pithyophila. Fr.

White. Pileus 1½–3 in. across, flesh thin, more or less plane and umbilicate, often becoming waved and lobed, hygrophanous, becoming shining white when dry, glabrous; gills slightly decurrent, about 2 lines broad, crowded, persistently white; stem about 2 in. long, 2 lines thick, equal, often compressed, white, glabrous, base downy, imperfectly hollow.

Agaricus (Clitocybe) pithyophilus, Fries, Hym. Eur., p. 87; Cke., Hdbk., p. 49; Cke., Illustr., pl. 105A (colour too pallid-tan, both pileus and gills).

On the ground in pine woods, &c.

Gregarious or slightly caespitose. Allied to *C. phyllophila*, but distinguished by the persistently white gills and white pileus. Smell pleasant. *C. tuba* closely resembles the present species, but differs in the deeply decurrent gills.

Gregarious, somewhat caespitose, white, but watery when moist, somewhat hygrophanous, in which respect it differs from *C. phyllophilus*, which is the same colour moist and dry; stem imperfectly hollow, round then compressed, equal, even, glabrous, base (not bulbous), with white down. Pileus thin, almost plane, umbilicate, at length deformed, wavy and undulately lobed, 2–3 in. broad, even, glabrous, flaccid, whitish when moist, shining-white when dry, margin slightly striate when old. Gills adnate, slightly decurrent, very much crowded, plane, 2–3 lines broad, distinct, quite entire, white. Smell not remarkable. (Fries.)

Clitocybe tornata. Fr.

White. Pileus 1–2 in. across, disc fleshy, remainder thin, flesh white; orbicular, flattened or somewhat depressed round the gibbous disc, at length minutely downy, somewhat shining; gills very slightly decurrent, horizontal, crowded;

stem about 1½ in. long, 1½–2 lines thick, equal, glabrous but not polished, slightly striate, tough, stuffed; spores elliptical, 4–6 × 3–4 μ.

Agaricus (Clitocybe) tornatus, Fries. Syst. Myc., i. p. 91; Cke., Illustr., pl. 103B; Cke., Hdbk., p. 50.

In woods, &c.

Distinguished among allies by its small size, and regularity of form. Stem stuffed, tough, fibrous, 1½ in. long, 1½–2 lines thick, equal, or attenuated towards the base, round, glabrous but not polished, white, base downy. Disc of pileus fleshy, the remainder thin, convex then flattened, at length depressed round the gibbous disc, 1–2 in. across, absolutely dry, entirely white, properly glabrous, but somewhat silky from the agglutinated veil, as in *C. rivulosa*; at length the surface slightly broken up and downy. Flesh white. Gills horizontal, entirely adnate, with a decurrent tooth, plane, very crowded, 1 line or more broad. (Fries.)

Clitocybe candicans. Pers.

Entirely white. Pileus about 1 in. across, flesh thin, convex then plane or slightly depressed, umbilicate, regular or slightly eccentric, even, with an adpressed silkiness, shining, shining white when dry; gills adnate then slightly decurrent, crowded, very thin, narrow, straight; stem 1–2 in. long, 1–2 lines thick, even, glabrous, cartilaginous, polished, equal, hollow, base incurved, rooting, downy; spores broadly elliptical or subglobose, 5–6 × 4 μ.

Agaricus candicans, Persoon, Syn., p. 456; Cke., Illustr., pl. 82; Cke., Hdbk., p. 50.

Among damp fallen leaves, &c.

Entirely white, small, rather tough; approaching *Omphalia* in the structure of the stem. The following form is described by Fries as occurring in pine woods.

Stem thin, flexuous, base glabrous; pileus plane, not umbilicate, naked (without silky down). Gills scarcely decurrent.

A remarkable form but scarcely to be separated as a species. (Fries.)

Clitocybe dealbata. Sow.

Pileus 1–1½ in. across, flesh thin, dry, white, tough; convex then plane, at length upturned and wavy, always

dry, even, glabrous, rather shining, at length minutely mealy under a lens, white; gills adnate, scarcely decurrent, thin, crowded, white; stem about 1 in. long, 2 lines thick, equal, often ascending, whitish, apex mealy, stuffed, often becoming hollow, entirely fibrous, white; spores elliptical, 4–5 × 2·5 μ.

Agaricus dealbatus, Sowerby, t. 123; Cke., Hdbk., p. 50; Cke., Illustr., pl. 104.

In sunny places among grass, &c. A form often occurs on old mushroom beds.

Small, sweet, inodorous, or nearly so, tough, entirely white. Pileus orbicular, or irregular and wavy. *C. ericetorum* differs in the distant, decurrent gills. Solitary or often caespitose.

Var. **minor**, Cke., Hdbk., p. 50; Cke., Illustr., pl. 175.

Smaller and more elegant than the typical form, pure white, pileus opaque; smell like meal.

Among dead leaves. Gregarious,

Clitocybe gallinacea. Scop.

White; acrid. Pileus 1–1½ in. across, rather fleshy at the disc, margin thin; convex then depressed, but not infundibuliform, even, dry, opaque; gills slightly decurrent, narrow, crowded, thin; stem about 1½ in. long, 2 lines thick, equal, even, solid.

Agaricus gallinaceus, Scopoli, Carn., p. 433; Cke., Hdbk., p. 50; Cke., Illustr., pl. 174.

Among grass, moss, &c.

Strong odour. (Cke.)

Resembling *Cl. dealbata* in form, but smaller, opaque, dingy white, taste somewhat acrid. Stem solid, but not cartilaginous, about 2 in. long, equal, ascending or flexuous, excentric, at first floccosely mealy, always opaque, white. Pileus slightly fleshy, convex then plane, not depressed, obtuse, ½–1 in. broad, unequal, dry, pruinosely hoary; flesh white, compact, but thin. Gills adnato-decurrent, thin, crowded, plane. (Fries.)

II. DIFFORMES.

Clitocybe decastes. Fr.

Densely caespitose. Pileus 5–12 in. across, soon almost plane, disc gibbous or obtuse; margin at first shortly incurved, then expanded, very much waved and often lobed, even, glabrous, dingy-brown or livid when moist, pale clay-colour when dry; flesh exceedingly thin except at the disc, whitish; stem 4–7 in. long, ½–1½ in. thick, usually slightly thinner upwards, rather soft, entirely fibrous, solid, white, usually curved and ascending, coalescent into a solid mass at the base; gills adnato-decurrent, or often more or less adnexed, up to ½ in. broad, rather narrowed towards the the margin, often wavy; spores globose, smooth, 4 μ diameter.

Agaricus (Clytocybe) decastes, Fries, Epicr., p. 65; Cke., Hdbk., p. 51; Fries, Icon., t. 52.

On the ground.

In open grassy places on the ground, forming dense tufts containing in some instances as many as 40 individuals. The stalks are entirely fibrous and easily split into longitudinal shreds. The pileus reaches up to 1 foot in diameter, flesh very thin, margin much waved and often distorted from mutual pressure, glabrous, smoky-brown, or livid, shining as if oiled. The stems are usually more or less grown together at the base. The tufts are usually much smaller when growing in woods.

Clitocybe subdecastes. Cke. & Mass.

Clustered. Pileus 1½–2½ in. high and broad, flesh rather thin; campanulate or convex, very obtuse, even smooth, pale ochraceous at the disc, becoming paler and whitish towards the more or less lobed margin; gills slightly rounded behind, adnate, 2–3 lines broad, narrower in front, rather crowded, white; stem 4–5 in long, ½–⅝ in. thick, equal, fibrillose, whitish, base smooth; spores globose, 4–5 μ diameter.

Agaricus (Clitocybe) subdecastes, Cke. and Mass., Cke., Hdbk., p. 366; Cke, Illustr., pl. 958.

On the ground.

Several stems are frequently grown together at the base. Pileus not becoming much expanded, and often irregular from mutual pressure. A very fine and distinct species. One of the many interesting fungi found by the late Dr. Carlyle, of Carlisle.

Clitocybe ampla. Pers.

Pileus 3–6 in. across, flesh thick at the disc, becoming thin towards the margin, when young almost cartilaginous and tough, convex then plane, somewhat gibbous, unequal, wavy; lax when old, even, glabrous, rarely virgate, sooty when moist and young, then livid, hoary or slightly silky when dry; stem solid, stout, up to 6 in. long, 1 in. thick, nearly equal, but often twisted, naked, white, apex downy, fleshy-fibrous internally, but the surface polished and somewhat cartilaginous; gills often rounded on one side and decurrent on the other, up to 1 in. broad, rather distant, often crisped when young, more or less serrulate, at first smoky horn-colour then whitish.

Agaricus (Clitocybe) amplus, Fries, Syst. Myc., i. p. 95; Cke., Hdbk., p. 365.

In woods among moss, &c.

Gregarious, sometimes in small clusters. Usually very large (pileus 1 foot broad, stem 6 in. long, 1 in. thick, gills up to 1 in. broad), but also smaller. Pileus somewhat gibbous, never depressed, sooty then livid, sometimes very smooth, at others virgate, hoary and somewhat silky when dry. Gills often sinuate on one side, rather crisped and serrulate. Stem slightly thickened at the apex, slightly downy. Smell none. (Fries.)

Clitocybe aggregata. Schaeff.

Pileus 2–4 in. across, flesh thin, flaccid; convex then expanded, often gibbous, wavy and often very irregular, silkily virgate or minutely wrinkled, greyish livid or pale yellow-rufescent, becoming pale; gills unequally decurrent, crowded, broad, pinkish-yellow or pallid; stems often growing together at the base, variable in size, unequal, somewhat fibrillose, thinner at the base, pinkish-yellow or whitish.

Agaricus aggregatus, Schaeffer, t. 305 and 306; Cke., Hdbk., p. 51; Cke., Illustr., pl. 182.

In oak woods; on sawdust, &c.

Caespitose, very irregular, often eccentric, lobed; habit almost that of *Pleurotus ostreatus*. Stem elongated or short, reddish-white. Pileus greyish-livid then rufescent, often marked with darker spots. Readily distinguished from *C. decastes* by the flaccid, often excentric pileus, and the yellowish flesh-coloured, somewhat fibrillose stem and gills. (Fries.)

Clitocybe elixus. Sow.

Pileus 2–4 in. across, flesh thick at the disc, becoming thin towards the margin, at first umbonate, then flattened and depressed, margin more or less wavy, minutely downy and streaked, disc smoky-buff, margin paler, marked with dingy spots; gills decurrent, distant, whitish; stem 1–1½ in. high, ⅜ in. thick, sometimes more, about equal, coloured like the pileus, solid; spores elliptical, white, 7 × 4 μ.

Agaricus elixus, Sowerby, Fung., t. 172; Cke., Hdbk., p. 51; Cke., Illustr., pl. 280.

In woods.

Solitary. Pileus becoming pale and slightly silky; gills unequally decurrent, connected by veins. (Fries.)

Pileus 2 in. broad, at first very strongly umbonate, obconical, at length flat or even depressed, with the border flexuous, not the least involute in any stage of growth; disc fuliginous, very minutely virgate; border whitish, with dingy sodden spots. Stem 1 in. high, ⅜ in. thick, or 2 in. high and ⅝ in. thick; sometimes short and stout, sometimes much elongated, dingy like the pileus, clothed with matted down which reaches up to the base of the gills, often smooth at the base, which is buried amongst leaves and attached to them by the downy mycelium; solid, mottled within, slightly discoloured beneath the cuticle; gills very distant, decurrent, white, interstices more or less veined. Spores elliptic; spicules long. Much eaten by slugs. This is certainly quite a distinct species from *Ag. camanophyllus*, to which Fries refers it. The gills are by no means thick; they are narrow and white, not glaucous. The whole plant in moist weather is like a sponge sodden with water. It does not appear to me to have any affinity with *Hygrophorus*. When young the pileus has quite the form of *Gomphidius glutinosus*. (Berk.)

Clitocybe fumosa. Pers.

Pileus 1–3 in. across, fleshy, margin thin; convex, often gibbous when young, regular or wavy, even, pellicle not separable, glabrous, sooty-brown, soon livid or grey when dry; gills adnate in regular forms but often decurrent when the pileus is irregular, crowded, distinct, greyish-white from the first; stem 2–3 in. long, 3–6 lines thick, almost equal, often twisted or curved, glabrous, dingy white, apex mealy, solid, fibrous; spores subglobose, 5–6 μ diam.

Agaricus fumosus, Persoon, Syn., p. 348; Cke., Hdbk., p. 51; Cke., Illustr., pls. 175 and 645.

In woods.

Gregarious, somewhat caespitose, tough, rather cartilaginous. Known from *Cl. elixa* by the truly obtuse pileus, which is never virgate, often regular. Smell none. (Fries.)

Clitocybe tumulosa. Kalchbr.

Caespitose. Pileus 1–2 in. across, disc fleshy, margin thin; conico-convex then expanded, obtusely umbonate or obtuse, even, glabrous, brownish umber, becoming pale; margin drooping; gills more or less decurrent or slightly emarginate, crowded, narrow, white, then greyish; stem 3–5 in. long, unequal, usually thicker below, minutely downy, pallid, solid.

Agaricus (Clytocybe) tumulosus, Kalchbrenner, Hym. Hung. Icon., pl. 5; Cke., Hdbk., p. 52; Cke., Illustr., pl. 105.

On the ground in woods.

Readily distinguished by the densely clustered habit, and the umber pileus. The gills are very variable, sometimes distinctly decurrent, at others rounded behind, and almost resembling a *Tricholoma*.

Clitocybe pergamena. Cooke.

Densely tufted. Pileus 1–2 in. across, flesh thick at the disc, thin elsewhere; pallid like vellum, rather cartilaginous, convex then plane, obtusely umbonate, smooth, even; gills broadly adnate with a decurrent tooth, 2 lines broad, rather crowded, white; stem 4–5 in. long, 2–3 lines thick, equal, ascending with a cartilaginous coating which often cracks up in flaps, whitish, squamulose at the apex, solid.

Agaricus (Clitocybe) pergamenus, Cke., Hdbk., p. 52; Cke., Illustr., pl. 643.

On stumps.

Readily distinguished by the densely tufted habit, and growing on wood. The distinctly cartilaginous stem suggests the genus *Omphalia*, but the gills are not truly decurrent.

Clitocybe cryptarum. Letell.

Densely caespitose. Pileus somewhat conical, depressedly floccose, spotted with brown; gills rather decurrent, narrow, arcuate, white; stem white, rather striate, virgate, attenuated upwards, more or less compressed, narrowly fistulose.

Agaricus cryptarum, Letellier, Champ., p. 92, f. 88; Cke., Hdbk., p. 52.

On sawdust.

Habit that of *C. tumulosa.* Pileus varying much in size, according to the dimensions of the clusters. Inodorous, insipid; stem mottled within. (Berk. & Broome.)

A doubtful species, respecting which little is known: Berkeley and Broome consider that they met with the species intended by Letellier. Fries, on the other hand, considers that it may be a form of *Collybia fusipes.*

Clitocybe opaca. Fr.

White. Pileus 1½–2½ in. across, flesh thickish at the disc, very thin elsewhere, convex, then expanded, umbonate, often depressed round the umbo, wavy, even, opaque, minutely flocculose; gills adnate with a suggestion of being decurrent, closely crowded, about 1½ line broad, white; stem 1½–2½ in. long, 2–3 lines thick, unequal, somewhat fibrillose, wavy, stuffed.

Agaricus (*Clitocybe*) *opacus*, Fries, Hym. Eur., p. 93; Cke., Hdbk., p. 52; Cke., Illustr., pl. 176.

In woods.

Solitary or caespitose and grown together at the base. Closely allied to *C. cerrusata*, with which it was once joined, and differing mainly in the umbonate pileus.

Clitocybe occulta. Cooke.

Pileus 1½–2½ in. across, flesh rather thick at the disc, thin elsewhere, white; convex then plane and depressed, even, smooth, but innately streaked or virgate, viscid, pallid, smoky about the disc, whitish at the margin; gills adnate and very slightly decurrent, scarcely emarginate, white,

about 1½ line broad; stem 1½–2 in. long, 3–4 lines thick, equal or slightly expanded into the pileus, white, fibrillosely striate, often curved, solid.

Agaricus (Clitocybe) occultus, Cke., Grev., xix. p. 40; Cke., Hdbk., p. 382; Cke., Illustr., pl. 1184.

Gregarious on charred ground.

Substance white, tough, cartilaginous. Known by the viscid pileus and scarcely or not at all decurrent gills.

Clitocybe monstrosa. Sow.

Pileus 1½–2½ in across, flesh rather thick, at first convex and umbonate, at length waved and lobed, white, opaque as if whitewashed; margin incurved; gills scarcely rounded behind, but not truly decurrent, rather distant, white or cream-colour; stem up to 1 in. long, ½–1 in. thick, compressed, solid, streaked, opaque white, slightly rooting, downy-squamulose above.

Agaricus monstrosus, Sowerby, t. 283; Cke., Hdbk., p. 53; Cke., Illustr., pl. 648.

On the ground.

Often densely caespitose, and then not compressed. (Cooke.)

III. INFUNDIBULIFORMES.

* *Pileus coloured, or becoming pallid, silky.*

Clitocybe gigantea. Sow.

Pileus 6–10 in. across, flesh rather thin in proportion to the size of the fungus, white, or tinged with tan, glabrous, when moist, slightly flocculose when dry; margin involute then spreading, glabrous, rather coarsely grooved; gills slightly decurrent, broad, very much crowded, branched and connected by veins, whitish then pale tan-colour, not separating spontaneously from the hymenophore; stem 1–2 in. long and nearly the same in thickness, equal, pallid, solid; spores white, 5 × 3 μ.

Agaricus giganteus, Sow., t. 224.

Agaricus (Clitocybe) giganteus, Fries, Monogr., i., p. 118; Cke., Hdbk., p. 53; Cke., Illustr., pl. 106.

Paxillus giganteus, Fries, Hym. Eur., p. 401.

In woods, &c.

Hymenophore not horny.

A very distinct species, very showy, large, subcaespitose, entirely whitish tan-colour; without close affinities. Stem solid, compact and firm inside and outside, 2½ in. long, 1–2 in. thick, equal, even, glabrous. Pileus depressed from the first, then broadly, *i.e.*, *plano-infundibuliform*, thin but equally fleshy, soft, not flaccid, but easily splitting from the margin towards the centre (almost papery and involute when old), upwards of a foot broad, often excentric and generally sinuately lobed, moist and adpressedly downy when growing, *slightly* flocculose and cracked into squamules when dry; margin at first very thin, involute, pubescent, soon spreading, glabrous, at length revolute, coarsely sulcate, or radiately rugose; gills slightly decurrent, closely crowded, almost 3 lines broad (2–3 times as broad as thickness of flesh of pileus), connected by veins, thin, fragile, straight, but sometimes varying to crisped and anastomosing, whitish then yellowish or tinged with rufous, smell weak. (Fries.)

Clitocybe maxima. Gärtn. & Mey.

Pileus 6–9 in. and even a foot across, disc fleshy, remainder thin, rather flaccid, broadly infundibuliform, somewhat umbonate, dry, pale tan or whitish, surface becoming slightly silky or downy, *margin even*; gills deeply decurrent, rather crowded, soft, whitish; stem 3–4 in. long, 1 in. thick, attenuated upwards, fibrillose, whitish, solid; spores 6 × 4 μ.

Agaricus maximus, Gärtn. and Meyer, Fl. Wett., p. 329; Cke., Hdbk., p. 53; Cke., Illustr., pl. 135.

Woods and pastures.

From the large size and colour, often confounded with *Cl. giganteus*, with which the present is not truly allied. Much larger than *Cl. infundibuliformis*. Stem solid, compact, but spongy within, elastic up to 4 in. long and 1 in. thick, attenuated upwards, fibrillosely striate, whitish. Pileus fleshy, disc compact, remainder thin, rather flaccid, not splitting as in *Cl. giganteus*, broadly infundibuliform, umbo central, gibbous, up to 1 foot across, always very dry, hence the surface is silky and almost even or squamulose, pale tan-colour or whitish; margin involute, pubescent, always even. Flesh white, at length soft. Gills deeply decurrent, acuminate at both ends, somewhat crowded, soft, simple, whitish,

not changeable. Smell weak, pleasant, almost as in *Cl. giganteus.* (Fries.)

Clitocybe infundibuliformis. Schaeff.

Pileus up to 3 in. across, disc fleshy, remainder thin; when young quite firm, convex then depressed, umbo gibbous, margin involute, softer and flaccid when adult and entirely infundibuliform, with a silky sheen, yellowish flesh-colour then buff, becoming pallid; flesh soft, white; gills truly decurrent, rather crowded, much narrowed and acute at both ends, soft, white; stem 2–3 in. long, 3–5 lines thick, stuffed, externally firm, elastic, conically attenuate, rarely equal, pallid, base with white down; spores 5–6 × 3–4 μ.

Agaricus (Clitocybe) infundibuliformis, Cke. Illustr., pl. 107; Cke., Hdbk., p. 54.

Agaricus infundibuliformis, Schaeffer, t. 212.

Among moss in fields and woods.

Smell pleasant; disc fleshy, margin thin, not moist, but rather silky under a lens, colour variable, as in most species in the present section, more or less rufescescent or flesh-colour, passing through buff to whitish, &c., but not white at first.

Var. **membranaceous**, Fries, Monogr., i. p. 24; Cke., Hdbk., p. 54; Cke., Illustr., pl. 646.

Differs from the typical form in every part being more slender; stem equal; pileus not umbonate and brighter in colour.

In pine woods.

Clitocybe trullaeformis. Fr.

Pileus about 2 in. across, flesh equal, snow-white, infundibuliform, margin flat and speading, always obtuse, floccosely downy, dry, greyish-brown, not changing colour; gills truly decurrent, distant, connected by veins, 2–3 lines broad, shining white; stem about 2 in. long, stuffed, firm, elastic, attenuated upwards, fibrillosely striate, grey, downy below.

Agaricus (Clytocybe) trullaeformis, Fries, Epicr., p. 68; Cke., Hdbk., p. 54.

Among grass, bushes, &c.

Smell scarcely evident, resembling *C. cyathiformis* in general form, and in the colour of the stem and pileus, but differs in

not being hygrophanous, flesh snow white, and gills shining white.

The rather distant gills, which are connected by veins, and infundibuliform pileus, distinguish this species, which is not hygrophanous. (B. and Br.)

Clitocybe incilis. Fr.

Pileus about 2 in. across, flesh thin, plane and umbilicate, then infundibuliform, even, silky-flocculose, appearing almost glabrous when young, obtuse, almost brick-red colour, the incurved margin crenate; gills more or less decurrent, arcuate 2–3 lines broad, distant, connected by veins, white then pallid, but not yellow; stem generally about ½ in. long, 2–3 lines thick, or more when compressed, usually thinner downwards, brick-red, at first with a very delicate mealy down, fibrous, tough, unequal, hollow; spores elliptical, 7 × 4 μ.

Agaricus (*Clitocybe*) *incilis*, Fries, Epicr., p. 69; Cke., Hdbk., p. 54; Cke., Illustr., p. 281 A.

On the ground in woods, &c.

A variable species, sometimes with a mealy smell, sometimes without smell.

Clitocybe sinopica. Fr.

Smell strong, resembling new meal. Pileus about 1 in. across, flesh thin, soon plane and slightly depressed, umbilicate, dry, at first glabrous then flocculose, dry, brick-red then becoming pale; gills slightly decurrent, very much crowded, rather broad, white then yellowish; stem 1–2 in. long, 1½ line thick, equal, rather fibrillose, coloured like the pileus, stuffed.

Agaricus (*Clitocybe*) *sinopicus*, Fries, Syst. Myc., i. p. 83; Cke., Hdbk., p. 366; Cke., Illustr., pl. 647.

In woods, chiefly on scorched places.

Small, appearing in spring or summer. Easily distinguished by the strong smell of new meal. Varies slightly or deeply umbilicate. Pileus at first red, appearing even and glabrous, then evidently flocculose and becoming pale.

Allied to *C. incilis*, which differs in the hollow stem, margin of pileus incurved and slightly crenate, and the slightly decurrent, distant gills connected by veins. (Fries.)

Clitocybe parilis. Fr.

Pileus about ¾ in. across, plane, depressed at the disc, atomate, disc flocculose, not striate, greyish-white, not hygrophanous; gills deeply decurrent, very much crowded, narrow, greyish-white; stem about 1 in. long and 1 line thick, equal, even, glabrous, naked, greyish-brown, tough.

Agaricus (Clitocybe) parilis, Fries, Epicr., p. 69; Cke., Illustr., pl. 281B.

On the ground in woods.

Slightly hygrophanous, but not becoming white. (Cooke.)

** *Pileus coloured or pallid, glabrous.*

Clitocybe geotropa. Bull.

Pileus 2–5 in. across, flesh thick, white; convex, then plane and finally more or less depressed, obtusely umbonate, the prominence remaining after the pileus becomes depressed, very smooth, even, margin thin, incurved, downy, pale pinkish-tan or buff; gills decurrent, crowded, narrow, simple, white, then coloured like the pileus; stem 3–5 in. long, 1 in. or more thick at the base, slightly attenuated upwards, compact, fibrillose, coloured like the pileus or paler, solid; spores elliptical, 6–7 × 4–5 μ.

Agaricus geotropus, Bull., t. 573, f. 2; Cke., Hdbk., p. 53; Cke., Illustr., pl. 83.

In woods and on their borders. Often in rings or troops.

Differs from *C. maxima* in being firmer, glabrous, and colour much more variable; from *C. gilva* in the thinner pileus, less crowded gills, and white flesh.

Pileus 1½–3 in. across, truly fleshy, convex then plano-depressed, usually gibbous, even, very smooth, moist in rainy weather, flesh-coloured tan, with drop-like spots when young, these however usually disappear with age, margin thin, pubescent, inflexed; flesh white; gills deeply decurrent, simple, 2–3 lines broad, somewhat crowded, white becoming pallid; stem solid, fleshy, not elastic, 2–3 in. long, slightly attenuated upwards, slightly fibrillose, white, then tinged yellow. (Fries.)

Clitocybe spinulosa. Stev. & Sm.

Pileus 1½–3 in. broad, creamy flesh-colour, fleshy, convex,

then plane or depressed, gibbous or umbonate, leathery, smooth, edge even and incurved, flesh white; gills deeply decurrent, single, rather crowded, white, then light yellow; stem 2–3 in. long, solid or stuffed, attenuated from the thickened base, fibrillose, whitish, zoned with crowded spots of the same colour as the pileus; spores spinulose, 9 μ diameter.

Agaricus (Clitocybe) spinulosus (Stev. & Smith), Stev., Brit. Fung., v. i. p. 84.

A. subinvolutus, Saund. & Sm., t. 36.

Among grass by wayside.

Odour sweet and pleasant. Growing in large patches, singly or two or three together.

The spinulose spores mark this as a distinct species. It differs in habit from *A. geotropus*, which has smooth spores. (Stev.)

Clitocybe subinvoluta. Batsch.

Pileus 2–3 in. across, flesh at the disc, margin thin; pileus convex then depressed, obtuse, smooth, even, pale tan-colour or with a brick-red tinge; margin involute; gills 1½–2 lines broad, decurrent, pale tan; stem about 2 in. long, ½–1 in. thick, nearly equal, longitudinally grooved, slightly downy at the apex, tinged reddish, solid; flesh like that of the pileus, white.

Agaricus subinvolutus, Batsch, Conspt., t. 204; Cke., Hdbk., p. 55; Cke., Illustr., pl. 108 (not of W. G. Smith, nor of Fries).

In fir woods, &c.

The above description belongs to the species of Batsch, not of W. G. Smith, in Saunders and Smith, pl. 36. The last-named differs from Batsch's fungus in the spinulose spores and concentric, coloured zones on the stem. *C. gilva* differs in the ochraceous flesh and closely crowded gills. *C. geotropa* is distinguished by the umbonate pileus.

Clitocybe gilva. Pers.

Pileus 2–3 in. across, flesh rather thin, pale ochraceous, as is also that of the stem; convex, soon depressed and often wavy, but not truly infundibuliform, obtuse, smooth, moist, pale dingy ochraceous; gills decurrent, up to 2 lines broad, closely crowded, thin, often branched, pallid then ochraceous; stem up to 1 in. long, ½ in. thick, glabrous,

coloured like the pileus, solid; spores subglobose or very broadly elliptical, 4–5 μ.

Agaricus gilvus, Persoon, Syn., p. 448; Cke., Hdbk., p. 55; Cke., Illustr., pl. 136.

In pine woods, &c.

Distinguished by the ochraceous colour of every part, also the flesh. A stouter plant than *C. splendens*; *C. inversus* differs in the rufescent gills, and *C. flaccidus* in the thin, flaccid, infundibuliform pileus, and the subflexuous, longer stem.

Clitocybe splendens. Pers.

Solitary. Pileus 2–3 in. across, flesh rather thick, white; plane then depressed or infundibuliform, glabrous, shining, yellowish; gills deeply decurrent, narrow, crowded, simple, white; stem about 1 in. long, 3 lines thick, glabrous, coloured like the pileus, solid, slightly thickened at the base or equal.

Agaricus splendens, Persoon, Syn., p. 452; Cke., Hdbk., p. 56; Cke., Illustr., pl. 109 (small form).

In woods, among pine leaves, &c.

Stem solid, 1½–2 in. long, 4–5 lines thick, sometimes equal and straight, at others thinner at the base and ascending, even, glabrous, coloured like the pileus. Pileus slightly fleshy, thin especially towards the shortly reflexed margin, plano-depressed, and at length infundibuliform, 3 in. across, even, glabrous, shining, gilvous then yellowish. In some specimens the pileus is excentric, and the greater part of the margin wavy. Gills deeply decurrent, thin, crowded (but less so than in *C. gilva*), simple, white, but with a yellow tinge when old.

Intermediate between *C. gilva* and *C. flaccida*. The typical form of *C. gilvus* differs in the compact pileus, often with drop-like markings, the very much crowded, somewhat branched, pale ochraceous gills and flesh. (Fries.)

Clitocybe inversus. Scop.

Pileus 2–3 in. across, flesh thin; fragile; convex, soon infundibuliform, margin involute, glabrous, even, rufescent or dull brownish-orange, gills decurrent, simple, pallid then rufescent; stem about 1½ in. long, 2 lines thick, glabrous,

rather rigid, paler than the pileus; stuffed, soon hollow; spores subglobose, 4 μ diam.

Agaricus inversus, Scopoli, Carn., p. 445; Cke., Hdbk., p. 56; Cke., Illustr., pl. 84.

Among leaves, &c.

Gregarious, subcaespitose, forming very large tufts, especially late in the autumn, deformed. Smell peculiar, *slightly acid. Stem sometimes stuffed, usually hollow*, hence compressed, rather rigid and corticated outside, not elastic, without a bulb, glabrous, whitish; the somewhat rooting base with white down, and *often growing together* in tufts, variously deformed, curved, ascending, &c. Pileus fleshy, rather fragile, convexo-plane, obtuse then infundibuliform and undulate, 2–3 in. broad, even, very glabrous, moist when growing, but not exuding drops, brick-red, or liver-coloured rufous, margin bent down, sometimes excentric. Flesh not thick but compact, coloured like the pileus. Gills truly decurrent, scarcely 2 lines broad, crowded, simple, whitish, the margin at length becoming coloured like the pileus. (*Fries.*)

Clitocybe flaccidus. Sow.

Pileus 2–3 in. across, flaccid, orbicular, umbilicate, umbo persistently absent, margin spreading, arched, glabrous, even, rarely cracking into minute squamules, tawny ferruginous, shining, not becoming pale; flesh thin, pallid, rather fragile when fresh, but quite flaccid when dry; gills deeply decurrent, arcuate, crowded, narrow, about 1 line broad, white then tinged yellowish; stem imperfectly hollow, elastic, tough, 1–2 in. long, 2–3 lines thick, somewhat equal, polished, naked, reddish rust-colour, base thickened, downy; spores subglobose, 4–5 × 3–4 μ.

Agaricus flaccidus, Sowerby, t. 185; Cke., Hdbk., p. 56; Cke., Illustr., pl. 123.

Among leaves, &c.

Gregarious, stems often connate at the base. Sometimes solitary and regular.

Var. **lobatus**, Sow., t. 185; Cke., Hdbk., p. 56; Cke., Illustr., pl. 137.

Caespitose, darker in colour; pileus lobed or contorted at the margin.

Clitocybe vermicularis. Fr.

Pileus slightly fleshy, umbilicate then reflexed, infundibuliform, wavy, even, glabrous, red, then pinkish-tan; gills decurrent, closely crowded, thin, white; stem hollow, soon compressed, glabrous, shining, white.

Agaricus (Clitocybe) vermicularis, Fries, Epicr., p. 72; Cke., Hdbk., p. 367.

In pine woods, &c.

Moist, rather fragile, pileus at first a pretty red, then flesh-coloured tan (almost hygrophanous), very often undulately lobed. (Fries.)

Clitocybe senilis. Fr.

Pileus about 2 in. across, flesh thin, infundibuliform, glabrous, concentrically cracked, dingy greyish tan-colour, margin straight, spreading; gills decurrent, about 1 line broad, crowded, white, then coloured like the pileus; stem 1–1½ in. long, 2–3 lines thick, equal, glabrous, whitish, solid; spores elliptical, 5–6 × 4 μ.

Agaricus (Clitocybe) senilis, Fries, Icon., p. 53, pl. 56, f. 1; Cke., Hdbk., p. 56; Cke., Illustr., pl. 110 (an uncracked form of).

In pine woods, &c.

Gregarious, inodorous. Stem solid, equal, 1½–2 in. long, 2–3 lines thick, often ascending, glabrous, whitish, base naked. Pileus with thin flesh, flaccid, disc depressed when young, soon infundibuliform, 2 in. and more across, concentrically cracked, margin not reflexed. Colour difficult to describe, dingy clay-colour. Gills deeply decurrent in straight lines, narrow, very much crowded, white at first then coloured like the pileus. (Fries.)

The form figured is not identical with that given by Fries in his "Icones," although it accords fairly with the description, except for the absence of concentric scars, and its colour. The Rev. M. J. Berkeley considers it a variety. [Found on a lawn.] (Cooke.)

*** *Pileus shining white.*

Clitocybe catina. Fr.

Pileus about 2 in. across, flesh thick at the disc, becoming quite thin towards the margin; plane then infundibuliform,

dry, glabrous, white at first, with a tinge of flesh-colour in rainy weather, pallid or yellowish when dry and old; gills decurrent, crowded, white; stem 1½–3 in. long, 3–5 lines thick, slightly incrassated at the base, white, elastic, solid.

Agaricus (Clitocybe) catinus, Fries, Epicr., p. 72; Cke., Hdbk., p. 57; Cke., Illustr., pl. 111,

Among dead leaves.

Stem stuffed, spongy inside, elastic, tough, 3 in. long, ¼ in. thick, in the Swedish form thickened and downy at the base. Flesh of pileus thin, plane then infundibuliform, always obtuse, even, glabrous, 2 in. broad, at first white, then distinctly pale flesh-colour during rain, pale tan in dry weather. Flesh flaccid, white. Gills decurrent, descending in straight lines, broader than in neighbouring species, and less crowded, persistently white.

Allied to *C. infundibuliformis*, having the same pleasant smell, but differs in being white at first, pileus never gibbous, glabrous; but when young with superficial down, which soon disappears. *Clitocybe phyllophila* differs in the pileus never being infundibuliform, slender stem, adnate gills, and absence of smell. (Fries.)

Clitocybe tuba. Fr.

Pileus 2–3 in. across, flesh thin, convexo-plane, umbilicate, even, the extreme margin even, never striate, whitish when moist, shining white when dry, somewhat hygrophanous, properly glabrous, but at first with exceedingly thin, silky patches of the veil, which soon disappear; gills deeply and truly decurrent, horizontal, very crowded, about 3 lines broad, white then pallid; stem about 2 in. long, 2–3 lines thick, equal, very tough, at length compressed, apex naked, white, stuffed then hollow.

Agaricus (Clitocybe) tuba, Fries, Epicr., p. 72; Cke., Illustr., pl. 112; Cke., Hdbk., p. 57.

In pine woods, &c.

Gregarious, entirely white, appearing late. Very similar to *C. pithyophila*, of which it is perhaps a form with an umbilicate pileus, and gills deeply decurrent and attenuated behind. (Fries.)

Clitocybe ericetorum. Bull. (figs. 14, 15, p. 301.)

White. Pileus about 1 in. across, disc fleshy; at first almost globose, then depressed and more or less top-shaped, glabrous, even, shining when dry; gills slightly decurrent, distant, rather broad, connected by veins; stem about 1 in. long, 2 lines thick, thinner at the base, glabrous, tough, stuffed.

Agaricus ericetorum, Bulliard, Champ., Fr., t. 551, f. 1D; Cke., Hdbk., p. 57; Cke., Illustr., p. 138.

On heaths, &c.

Resembling *Hygrophorus niveus* in general appearance, the two being scarcely distinguishable from drawings, but very distinct in structure. The present species is arid, soft, elastic, smell pleasant. (Fries.)

IV. CYATHIFORMES.

Clitocybe cyathiformis. Bull.

Pileus 1½–3 in. across, flesh thin, plano-depressed when young, then infundibuliform, even, glabrous, hygrophanous, rather slimy and usually dark brown when moist, becoming pale and opaque when dry, undulate in large specimens, the margin remains involute for a long time; flesh watery, similar in colour to the pileus, splitting; gills adnate, becoming decurrent with the depression of the pileus, joined behind, distant, greyish-brown, sometimes branched; stem spongy and stuffed inside, elastic, at length often hollow, 2–4 in. long, 3–4 lines thick, attenuated upwards, brownish-fibrillose, fibrils forming an imperfect reticulation, coloured like the pileus or a little paler, apex naked (not mealy), base villous.

Agaricus cyathiformis, Bull., t. 575, f. M.; Cke., Hdbk., p. 57; Cke., Illustr., pl. 113.

On the ground in pastures and woods, rarely on rotten wood.

Usually blackish-umber, but varies to paler greyish-brown, pinky-tan, pale cinnamon, or brownish; then dingy ochraceous or tan-colour. Margin expanded when old, and also indistinctly striate. (Fries.)

Var. **cinerascens**, Fries, Hym. Eur., p. 100; Cke. Hdbk., p. 367; Cke., Illustr., pl. 1151B.

Agaricus cinerascens, Batsch, f. 101.

Pileus up to 1 in. across, thin, infundibuliform, pale smoky-brown, gills decurrent, yellowish-white; stem 1–2 in. long, 1½ line thick, greyish, reticulately fibrillose, hollow.

Among moss.

In Cooke's figures the gills are grey.

Clitocybe expallens. Pers.

Pileus 1–2 in. across, rather fleshy when young, convex then expanded, obtuse, even, greyish-brown, at first hoary with a superficial silkiness, then plane to infundibuliform, livid, disc rather fleshy, the expanded, membranaceous margin striate; gills decurrent, narrow at both ends, thin, crowded, soft, greyish-white; stem about 2 in. long and 2 lines thick, equal, glabrous, apex silky, white, cottony inside, soon hollow, tough.

Agaricus (Clitocybe) expallens, Fries, Monogr., i. p. 32; Cke., Illustr., pl. 220.

Agaricus expallens, Pers., Syn., p. 61.

In pastures, woods, &c.

Smaller, earlier, and paler in colour than C. cyathiformis; small forms of the latter are, however, difficult to distinguish from the present species. Everywhere watery, very hygrophanous; pileus whitish or pale tan when dry. (Fries.)

Clitocybe obbata. Fr.

Pileus about 1 in. across, flesh thin; umbilicate then infundibuliform, glabrous, hygrophanous, margin becoming slightly striate, blackish or sooty-brown; gills decurrent, about 1 line broad, distant, at first dark grey then powdered with white; stem about 2 in. long, 2 lines thick, equal, tough, glabrous, often wavy, greyish-brown, hollow.

Agaricus (Clitocybe) obbatus, Fries, Epicr., p. 74; Cke., Hdbk., p. 58; Cke., Illustr., pl. 230.

In pine woods.

Fries describes two forms:—

(A.) Stem hollow, 2 in. and more long, equal, 1–2 lines thick, often ascending or flexuous, glabrous, naked, slightly striate (striae white, interrupted), greyish-brown. Pileus almost membranaceous, convex then plane, disc broadly

umbilicate, 1 in. across, glabrous, striate to the middle, blackish-brown, pale-grey when dry. Gills slightly decurrent, distant, broad, dark-grey with white meal. (B.) Stem spongy and soft, at first stuffed with downy fibrils, then hollow, entirely glabrous, even, and naked. Pileus infundibuliform. Gills grey, and everywhere very watery, tough, flexible, inodorous. (*Fries.*)

Clitocybe pruinosa. Lasch.

Pileus about 2 in. across, flesh thin, greyish; umbilicate then infundibuliform, almost even, brown, pruinose at first, then glabrous; gills slightly decurrent, crowded, narrow, whitish then dingy; stem about 1½ in. long, 1½–2 lines thick, equal, fibrillose, coloured like the pileus, somewhat stuffed.

Agaricus pruinosus, Lasch. in Fries, Hym. Eur., p. 101; Cke., Illustr., pl. 231; Cke., Hdbk., p. 58.

Pine woods among moss, and on trunks.

Slender, rigid, inodorous, stem stuffed or imperfectly hollow, 1½ in. long, 1½ line thick, equal, often ascending or curved, fibrillose when young, colour of the pileus, but often paler. Flesh of pileus almost membranaceous, umbilicate and pruinose when young, broadly infundibuliform and glabrous when adult, brown, grey and squamulose when dry. Flesh thin, becoming greyish. Gills decurrent, crowded, narrow, slightly arcuate when young, falcate when adult; white, then sordid. Readily distinguished from neighbouring species by colour and habit. (*Fries.*)

Clitocybe concava. Scop.

Pileus 1–2 in. across, flesh very thin; broadly and deeply umbilicate, somewhat pierced at the base, limb convexo-plane, wavy, hygrophanous, dark grey; gills decurrent, crowded, narrow, smoky-grey; stem 1–1½ in. long, 1–2 lines thick, equal, glabrous, grey, stuffed.

Agaricus concavus, Scopoli, Fl. Carn., p. 449; Cke., Hdbk., p. 58.

In pastures, &c.

A very distinct species, gregarious, inodorous, entirely smoky-grey. Stem stuffed, tough, composed entirely of soft fibres, usually short, 1 in. or a little more, 1–2 lines thick, equal, naked, glabrous, grey. Pileus very thin,

flaccid, at first plano-convex, but broadly and deeply umbilicate, at length entirely concave (not infundibuliform), 1–2 in. broad, sooty when moist, grey or hoary tan when dry, margin even. Flesh tough, pallid. Gills decurrent, arcuate, closely crowded, 1–2 lines broad, dark smoky-grey. At first sight suggesting the genus *Omphalia*, and agreeing in habit with *O. maura*, but the stem is entirely fibrous, and the gills in *O. maura* are white. (Fries.)

Distinguished from *C. ditopa* by the absence of smell.

Clitocybe brumalis. Fr.

Pileus about 1 in. across, flesh thin, expanded, umbilicate then infundibuliform and usually variously waved and lobed, glabrous, flaccid, hygrophanous, livid, whitish or yellowish when dry, disc often darker; gills decurrent, about 1 line broad, crowded, pallid; stem up to 2 in. long and about 2 lines thick, nearly equal, slightly curved, glabrous, whitish, often compressed, imperfectly hollow; spores 4–5 × 3–4 μ.

Agaricus (Clitocybe) brumalis, Fries, Epicr., p. 76; Cke., Hdbk., p. 59; Cke., Illustr., pl. 114.

In woods, &c.

Truly autumnal, being most abundant in November. There are two forms. *(A.)* on pine leaves in pine woods; *(B.)* among heather. (A.) Stem rather firm, hollow, about 2 in. long, 2 lines thick, equal or slightly thickened at the apex, at length compressed, somewhat incurved, glabrous, naked, becoming livid, white when dry, base white and downy. Flesh of pileus membranaceous, at first convex, umbilicate, margin reflexed, about 1 in. across, then infundibuliform, often irregular and undulate, up to 2 in broad, glabrous, even, livid when moist, whitish then becoming yellowish when dry, disc at first usually darker; gills decurrent, at first arcuate, then descending, 1 line broad, crowded, distinct, livid then yellowish white, smell weak, not unpleasant. (B.) Entirely watery white; stem hollow, somewhat striate, base glabrous; pileus infundibuliform, margin deflexed, milky-white when dry. Gills less crowded, but rather broader, whitish. (Fries.)

V. ORBIFORMES.

* *Gills grey or olive.*

Clitocybe orbiformis. Fr.

Pileus about 2 in. across, flesh thin, convex then plane, very obtuse, not truly depressed, orbicular, glabrous, smoky-grey, hygrophanous, margin spreading, even; gills adnately decurrent, rather distant, 2–3 lines broad, greyish-white; stem about 3 in. long, 4–5 lines thick, equally attenuated upwards from the thickened, downy base, round, tough, somewhat striate, grey, naked upwards, fibrous outside, elastic, stuffed.

Agaricus (Clytocybe) orbiformis, Fries, Epicr., p. 76.

Grassy places in pine woods, &c.

Smell none. Analogous with, but not allied to *C. cyathiformis*.

Clitocybe metachroa. Fr.

Pileus 1–2 in. across, flesh thin, convex at first, soon plane or even depressed, brownish-grey when young, then livid, whitish when dry, margin even, slightly striate when old; gills adnate, scarcely decurrent, crowded, linear, flat, thin, greyish-white; stem stuffed when young, round, soon hollow and consequently easily compressed, about 1½ in. long, 2 lines thick, equal, tough, fibrous outside, grey, apex with white meal.

Agaricus (Clytocybe) metachrous, Fries, Epicr., p. 77; Cke., Hdbk., p. 59; Cke., Illustr., pl. 115.

In dry pine woods, &c.

Very variable, but easily recognised by the following points:—Smell none; apex of stem mealy; pileus convex (subumbonate), then plane and depressed; gills greyish-white. (Fries.)

Clitocybe zygophylla. Cke. & Mass.

Pileus 2–4 in. across, fleshy at the disc, very thin elsewhere; convex then expanded, disc often slightly depressed, tough, flaccid, hygrophanous, with a greyish tint when moist, pale ochraceous-white when dry, margin thin, in-

volute at first, rugose or plicate, as if pinched up at regular intervals; gills *deeply decurrent, rather distant*, 2 lines broad, distinctly connected by veins, grey; stem about 2 in. long, ½–⅓ in. thick, equal, slightly curved, even, smooth, white, downy at the base, stuffed, expanding into the pileus; spores elliptical, 8 × 4 μ.

Agaricus (Clytocybe) zygophyllus, Cke. and Mass., Grev., xv. p. 67; Cke., Illustr., pl. 948; Cke., Hdbk., p. 367.

Among leaves.

Readily known among the grey-gilled species by the deeply decurrent gills being connected by veins, and the puckered margin of the pileus.

Clitocybe ditopa. Fr.

Smell strong, resembling meal. Pileus 1–1⅔ in. across, flesh thin; convex then plane, at length depressed, dingy brownish-grey, even, glabrous, hygrophanous; gills slightly decurrent, crowded, thin, about 1 line broad, dark brownish-grey; stem about 1 in. long, 1½ line thick, equal, almost smooth, coloured like the pileus, hollow.

Agaricus (Clitocybe) ditopus, Fries, Syst. Myc., i. p. 171; Cke., Hdbk., p. 59; Cke., Illustr., pl. 116.

In woods, especially pine.

Resembling *C. metachroa* in stature, but distinguished by the strong smell of new meal. Pileus brownish-grey, convex when small, the larger forms depressed and wavy. (Fries.)

Clitocybe pausiaca. Fr.

Pileus about 1 in. across, flesh thin, convex then plane, even, glabrous, umber with an olive tinge, ochraceous when dry; gills obtusely adnate, ventricose, crowded, olivaceous-umber; stem 2–3 in. long, 1½ line thick, equal, striate, coloured like the pileus, apex powdered with white meal, hollow.

Agaricus (Clitocybe) pausiacus, Fries, Epicr., p. 77; Cke., Hdbk., p. 59; Fries, Icon., t. 58, f. 2.

In pine woods.

Smell weak, but distinctly mealy. Stem imperfectly hollow, 2–3 in. long, 1½ line thick, equal, striate and the surface undulated, apex with white meal, coloured like the pileus. Pileus fleshy, thin, at first convex, somewhat umbonate, then plane or slightly depressed, 1 in. broad, even.

glabrous, covered at first with a slight silkiness, colour variable, but always dark, somewhat olive or umber, rather ochraceous when dry. Gills very broad behind, obtusely adnate, resembling a segment of a circle, closely crowded, olive or umber in every stage; spores white. (Fries.)

** *Gills whitish.*

Clitocybe diatreta. Fr.

Pileus 1–2 in. across, flesh thin, tough, convex when young, regular, obtuse, margin involute, pubescent: flattened and depressed when adult, often wavy, even, glabrous, dingy flesh-tint when moist, at length tan-colour and flaccid, margin spreading, naked, whitish when dry; gills adnate, but narrowed and with a decurrent tooth behind, crowded, 1 line broad, whitish flesh-tint at first, then pallid whitish; stem 1½–2 in. long, 2 lines thick, equal, round, even, glabrous, pallid, apex naked, base downy, stuffed then hollow, elastic, rather wavy.

Agaricus (Clitocybe) diatretus, Fries, Epicr., p. 78; Cke., Hdbk., p. 60; Cke., Illustr., pl. 232.

In pine woods.

Smell almost obsolete. Stem not cartilaginous.

Gathered at the same time with *C. fragrans*, from which it was at once distinguished by the total absence of the peculiar odour of that species. (B. and Br.)

Clitocybe fragrans. Sow.

Smell strong, spicy. Pileus about 1 in. across, flesh rather thick: convex, soon expanded and slightly depressed or umbilicate, even, glabrous, hygrophanous, uniform watery white, disc not darker, whitish when dry; gills slightly decurrent, rather crowded, 1 line broad, distinct, whitish; stem about 2 in. long, equal, slightly curved, elastic, glabrous, whitish, stuffed then hollow.

Agaricus fragrans, Sowerby, pl. 10; Cke., Illustr., pl. 124; Cke., Hdbk., p. 60.

In woods among moss, &c.

Distinguished from other species resembling it in colour and size, by the fragrant smell resembling aniseed.

Pileus 1–2 in. broad, convex, then plano-convex, minutely dimpled, dirty-white, very rarely slightly zoned, when dry nearly white; margin thin and transparent, turned in when young and minutely tomentose. Gills very broad, decurrent, distinct, not pure white. Stem 2–3 in. high, 2–3 lines thick, attenuated upwards, minutely fibrillose, villous at the base, sometimes pruinose above. Odour very agreeable, like that of aniseed. (Berk.)

Clitocybe augustissima. Fr.

Pileus about 2 in. across, even, glabrous, watery-white, shining white when dry; plane then depressed, not umbilicate, margin spreading, minutely striate when adult; flesh very thin but firm; gills rather decurrent, very much crowded, thin, narrow, white; stem about 2 in. long, 1–2 lines thick, often curved and flexuous, white, base downy, apex naked, stuffed, fibrous within; spores elliptical, 5×3 μ.

Agaricus (*Clitocybe*) *angustissimus*, Fries, Hym. Eur., p. 105; Cke., Hdbk., p. 60; Cke., Illustr., pl. 125.

In woods, &c.

Closely resembling *C. fragrans*, but inodorous, and a clearer white. Less watery than its allies. (Fries.)

Clitocybe obsoletus. Batsch.

Smell spicy, but weak. Pileus about 1 in. across, rather fleshy; convex then plane or slightly depressed, sometimes papillate, even, glabrous, hygrophanous, pallid or pale pinky-tan, whitish when dry; gills obtuse behind, adnately decurrent, sometimes almost rounded behind, broad, crowded, whitish; stem about 1 in. long, 1½ line thick, whitish, elastic, hollow.

Agaricus obsoletus, Batsch, f. 103; Cke., Hdbk., p. 60; Cke., Illustr., pl. 233.

Among grass and leaves.

Exactly intermediate between *C fragrans* and *C. metachroa.* Smell pleasant, resembling aniseed, but not strong. Stem straight, apex pruinose, base often downy. Pileus somewhat umbonate when young, yellowish-white when dry; pallid, livid or pinky-tan when moist. (Fries.)

Just the plant of Batsch, but the odour varying from that

of bitter almonds to that of aniseed. The term *obsoletus* used by Batsch does not refer to an odour less than that of *A. fragrans*, but to the pallid tint as compared with his *A. obsolescens*. (B. and Br.)

VI. VERSIFORMES.

* *Pileus dingy, brownish.*

Clitocybe ectypa. Fr.

Pileus 2–3 in. across, flesh rather thin, convex then almost plane, centre often slightly depressed, margin sometimes arched, striate, dingy or honey-yellow, then rufescent, squamulose or virgate with sooty fibrils; gills adnate with a decurrent tooth, distant, connected by veins, white, soon pallid, then spotted with rufous, mealy with the spores; stem 2–4 in. long, 3–5 lines thick, somewhat bulbous or equal, fibrillose, dingy yellowish, soon olive and the base becoming blackish; spores elliptical, 9×6 μ.

Agaricus (Clitocybe) ectypus, Fries, Epicr., p. 80; Cke., Hdbk., p. 61; Cke., Illustr., pl. 126.

In swampy places, &c.

Gregarious; sometimes several stems are joined at the bottom. Resembling *Armillaria mellea* in colour and general appearance, but without a trace of a ring. Smell pleasant at first, resembling aniseed, at length foetid. Pileus brown when decaying. (Fries.)

[**Clitocybe difformis.** Pers.

This species must be excluded from the British list. The figure of Bolton (t. 17), supposed to be this species, is *C. pithyophila*.]

** *Pileus bright coloured.*

Clitocybe Sadleri. Berk.

Taste very acrid and bitter. Pileus 1–2 in. across; convex, soon plane then depressed or umbilicate, margin spreading and often cracking, yellow, disc tawny, silky then smooth;

flesh thick at the disc, margin thin; gills decurrent, about 1 line broad, closely crowded, lemon-yellow, margin entire; stem 2–2½ in. long, 2 lines thick, yellow, with brownish fibrils, solid.

Agaricus (*Clitocybe*) *Sadleri*, Berk., Ann. Nat. Hist., no. 1734; Cke., Hdbk., p. 62; Cke., Illustr., pl. 127.

On an oak tub in a conservatory.

Clustered. The sour smell, strong acrid taste, colour, and habit suggest the genus *Hypholoma*, as does also the habitat. I have found what appears to be exactly the same thing along with typical *Hypholoma fascicularis* on a stump, and cannot but think the present is nothing more than an abnormal form of *Hypholoma* with the gills more or less decurrent and permanently sterile, hence not becoming tinged with the dark spores. Several instances of dark-spored species with sterile gills that remain pale, are on record.

LACCARIA, B. & Br.

Pileus convex then umbilicate or depressed, flesh thin; gills broadly adnate, sometimes with a decurrent tooth, becoming mealy with the copious subglobose, minutely warted white spores; stem central, externally fibrous; veil not evident.

Laccaria, B. & Br., Annals of Nat. Hist. (1883), p. 370.

Clitocybe (as a subgenus of *Agaricus*), Fries, Syst. Myc., i. p. 70; Cke., Hdbk., p. 45.

Separated from *Clitocybe* on account of the broadly adnate gills becoming powdered with the white, subglobose, minutely warted or echinulate spores.

This is clearly quite as distinct from the genus *Agaricus* as *Russula* and *Lactarius*, and cannot with any justice be included in the subgenus *Clytocybe*. We have several very distinct forms from Ceylon, besides our own *A. laccatus*, *bellus*, and one or two continental species. The amethyst-coloured form usually referred to *A. laccatus* is probably distinct. (B. & Br.)

Laccaria laccata. Scop.

Pileus 1–2½ in. across, flesh thin, convex thin often more or less wavy and irregular, umbilicate, hygrophanous, even, clear violet *or rich brown, almost white and minutely* squamulose when *dry; gills adnate, distant, coloured like* the pileus, at length white with powder; stem 2–3 in. long, 2 lines thick, equal, fibrous, coloured like the pileus, tough, stuffed; spores globose, minutely echinulate, 8–9 μ diam.

Agaricus laccatus, Scopoli, p. 444; Cke., Hdbk., p. 61; Cke., Illustr., pl. 139.

Laccaria laccata, Berk., Grev., xii. p. 70.

In woods.

Very variable; bright amethyst or deep reddish brown, stem and gills similarly coloured. Pileus pallid or dingy white when dry, and minutely but densely squamulose.

Laccaria bella. Pers.

Pileus 1–1½ in. across, rather fleshy, convex then depressed or umbilicate, orange-yellow with small, scattered darker adpressed squamules; gills adnate with a decurrent tooth, broad, rather distant, yellow, connected by veins, at length powdered with white meal; stem about 2 in. long, 1½ line thick, equal, tough; rivulose, yellowish, stuffed; spores subglobose, minutely warted, 7 × 5–6 or 6–7 μ diam.

Agaricus bellus, Persoon, Syn., p. 452; Cke., Hdbk., p. 61; Cke., Illustr., pl. 183.

Laccaria bella, B., Grev., xii. p. 70.

In pine woods.

Pileus 2½ in. broad, deep orange-brown, becoming gradually pale: gills incarnato-ferruginous. Stem 2½ in. high. Fries' plant has dirty-yellow gills, and so far differs from mine. It is at once distinguished from *L. laccata* by its foetid smell. (Berk.)

Stem stuffed, at length hollow, about 2 in. long, 2–3 lines thick, equal, tough, but fibrous, externally broken up into fibrils, becoming yellowish. Pileus rather fleshy, pliant, convex then expanded, centre depressed, about 2 in. broad, dark yellow, sometimes with a rufescent tinge, with scattered darker squamules, at *length becoming* pale, and the margin undulate and wavy. Gills adnate, at length

with a decurrent tooth, very broad, distant, connected by veins, sometimes forked, paler than the pileus and yellowish, then with a rufescent tinge. Almost intermediate between *C. ectypa* and *Laccaria laccata*; smell when old resembling the first, but nearer the second in other points, and varying equally from both in stature. On rotten wood of *Pinus silvestris*: somewhat caespitose. (Fries.)

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mon-brown, edge sometimes quite entire and concolorous, sometimes fimbriato-serrate, and white. Stem 2–4 in. long, 2–4 lines thick, cylindrical, exactly equal, firm, fibrilloso-striate (striae paler), but becoming even, brown, apex naked, becoming pale, sometimes with an olive shade, at length everywhere blackish-brown, same colour inside; spores pip-shaped, granulated 8–9 × 4 μ.

Cortinarius uraceus, Fries, Epicr., p. 309; Cke., Hdbk., p. 278; Cke., Illustr., pl. 796.

In pine woods.

Extreme margin of pileus incurved. Veil superior, fibrillose, brown, but rarely conspicuous. (Fries.)

Cortinarius (Hygr.) jubarinus. Fr.

Pileus 1–2 in. across, rather fleshy, campanulate then flattened, obsoletely umbonate, in the larger forms, and when old, depressed at the centre, often repand and undulate, at length reflexed, fragile, brilliant tawny cinnamon, shining, disc even, glabrous, when young silky at the margin from the veil (not velvety-villose as in *C. cinnamomeus*), when old innato-fibrillose under a lens, not very hygrophanous, and very shiny when dry; gills adnate, rather distant, 1–3 lines broad, distinct, tawny-cinnamon, edge quite entire, same colour; stem 2 in. long, ¼ in. thick, 2–3 lines in small specimens, at first stuffed then hollow, fibrilloso-striate, pale tawny without and within, base and naked apex paler; spores 10 × 5 μ.

Cortinarius (*Hygrocybe*) *jubarinus*, Fries, Monogr., ii. p. 105; Cke., Hdbk., p. 279; Cke., Illustr., pl. 797.

In pine woods, on pine leaves, &c.

At first sight closely resembling *C. cinnamomeus*, but differs in the white, fibrillose, very fugacious veil. (Fries.)

Cortinarius (Hygr.) pateriformis. Fr.

Pileus about 1 in. across, rather fleshy, orbicular, plane then depressed, very obtuse, rigid, dry, even, glabrous, chestnut-brown, at first silky-white near the margin from the veil; flesh pallid; gills adnate, with a decurrent tooth, crowded, thin, plano-convex, brick-red or watery cinnamon; stem 2–3 in. long, 1–2 lines thick, equal, rather firm, straight, fibrillose, becoming brownish, base downy, white, hollow; ring fibrillose, fugacious.